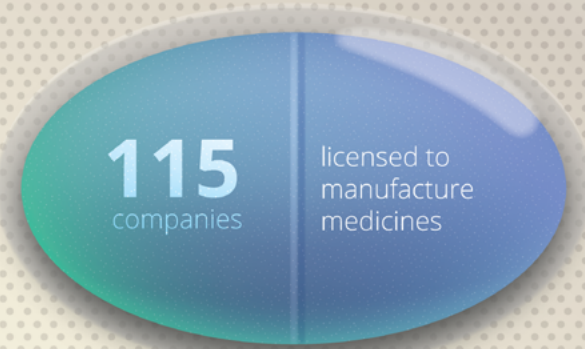


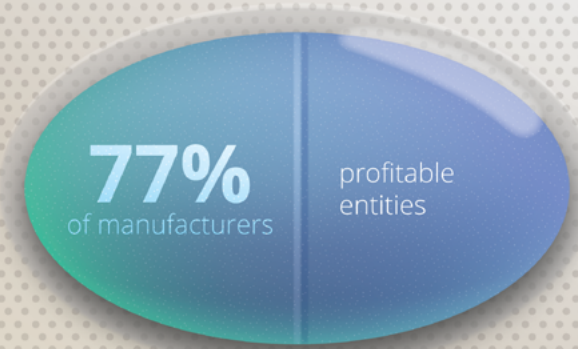
PHARMACEUTICAL INDUSTRY IN UKRAINE



Highly competitive market



Modern sector



Innovative industry



PHARMACY IN UKRAINE

2018

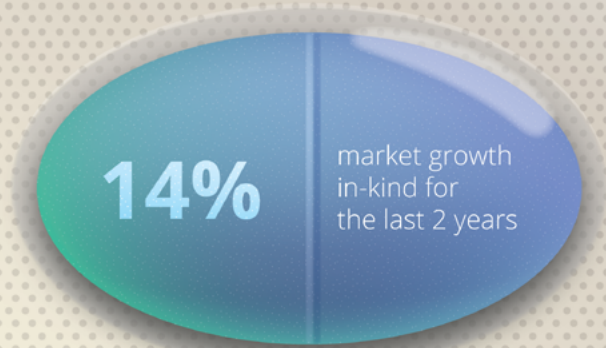
Competitive manufacturers



Globally integrated



Dynamic industry



Why did we create this handbook?

Medicine is one of important, inherent parts of our life. However, development and production of a new medicine is a difficult and time-consuming process. Constant demand on a healthy way of life ensures market development — which is one of the leaders by the number of scientific researches and, at the same time, this market plays a significant role in economic paradigm in the future of Ukraine.

Pharmacy in Ukraine is already a well-established industry: with a lot of players, and absence of the monopoly. The successful pharmacy development not only facilitates access of Ukrainians to medicines, but, together with other innovative industries, it can boost an export and economic growth.

Nowadays, weak economy of Ukraine hinders the development of pharmaceutical production. To reach the level of global pharmaceutical brands, Ukraine requires a great domestic demand to provide financing of scientific researches.

Ukraine has a great potential in this area, which is yet to be implemented.

Content

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- 1 GLOBAL PHARMACEUTICAL INDUSTRY**
 - pharmaceutical manufacturing process
 - growth forecast
 - TOP companies
 - global market
 - 2 PHARMACEUTICAL INDUSTRY IN UKRAINE**
 - history of the development
 - investment in the industry
 - market leaders
 - employment
 - 3 PHARMACEUTICAL MARKET OF UKRAINE**
 - market dynamics
 - sales structure
 - advertisement
 - distribution
 - 4 TRADE IN PHARMACY**
 - trade dynamics
 - main partners
 - global leaders

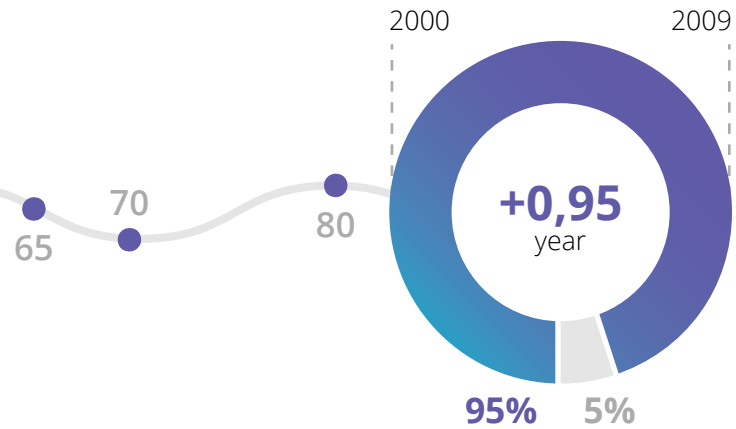
IMPACT OF MEDICINES ON LIFE EXPECTANCY

Longevity is increasing for different population categories*



In the age of 65

Longevity growth breakdown depending on the reason, 2000–2009, years

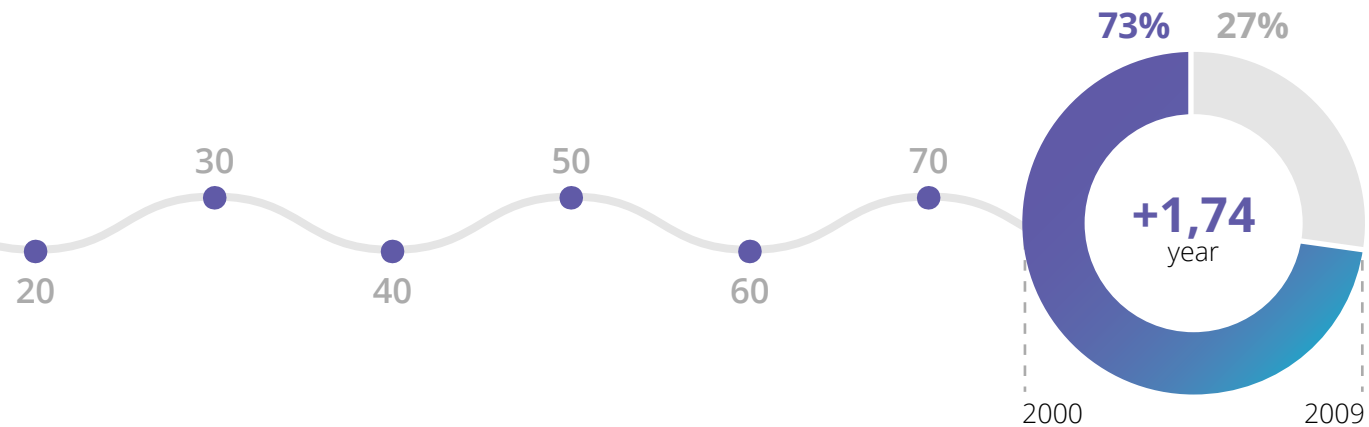


New pharmaceuticals were one of the main reason of longevity increase in developed countries from 2000 to 2009.

New pharmaceuticals were launched after 1990


Other reasons (income growth, education, immunization, access to the healthcare system etc.)

At birth



Source: Lichtenberg, F: Pharmaceutical innovation and longevity growth in 30 developing OECD and high-income countries, 2000–2009

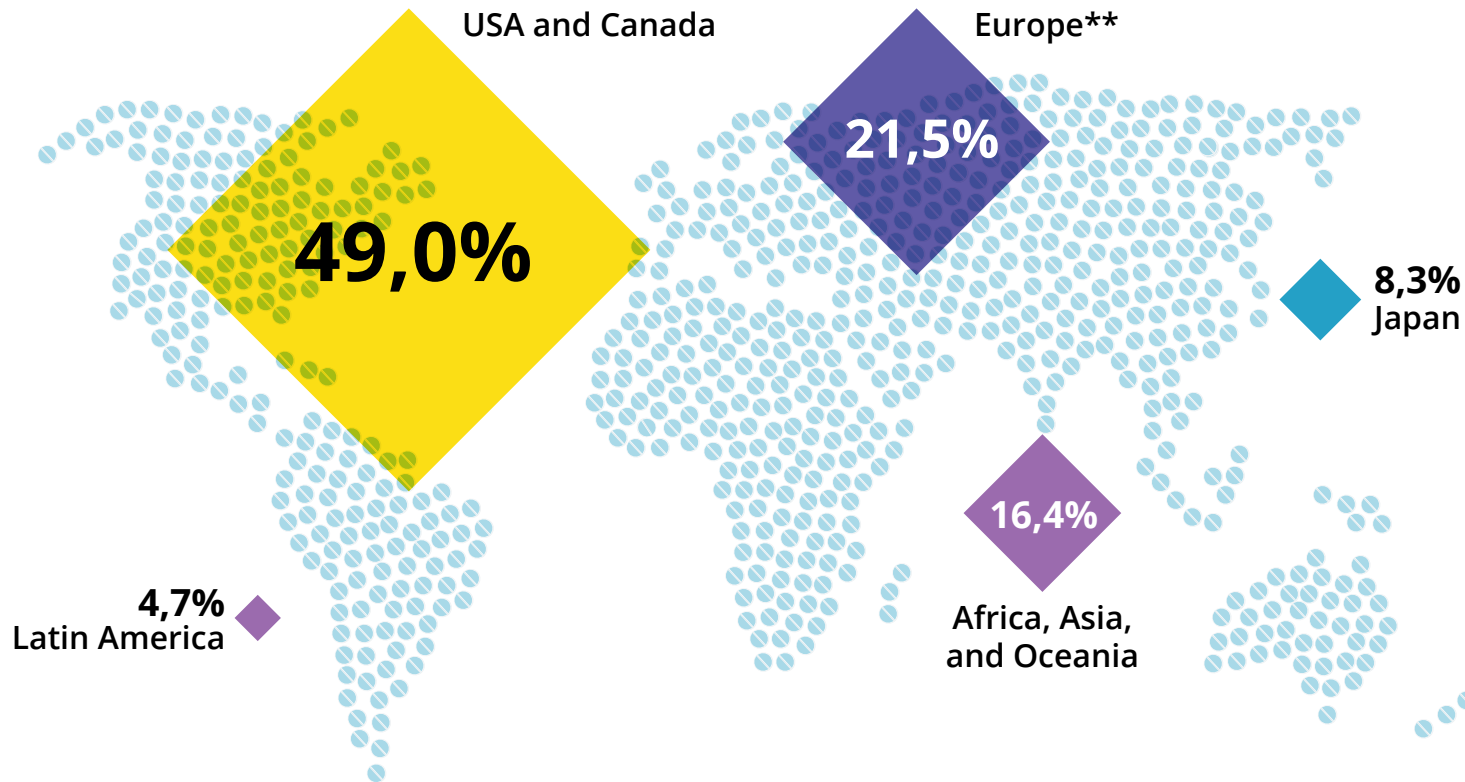
*The research was committed in 30 developed and developing countries.



**GLOBAL
PHARMACEUTICAL
INDUSTRY**

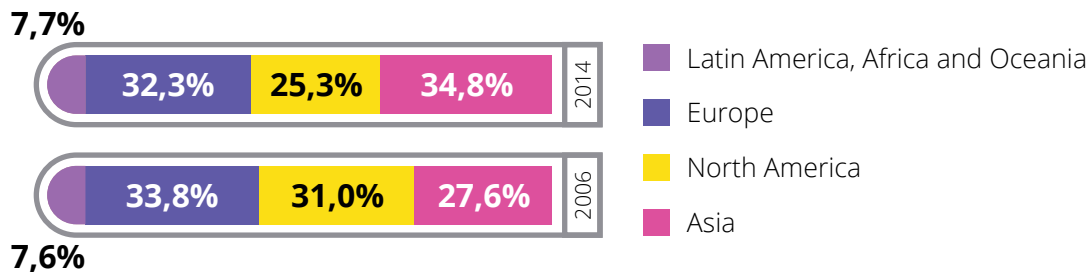
GLOBAL PHARMACEUTICAL MARKET

Breakdown of the world pharmaceutical market SALES in 2016*, %



The USA and Canada pharmaceutical markets constitute the half of global sales.

Regional breakdown of the gross value added in the pharmaceutical industry, %



The manufacturing process itself slightly transfers to the developing process countries. Including this tendency, Ukraine has a good chance to enhance own pharmaceutical industry.

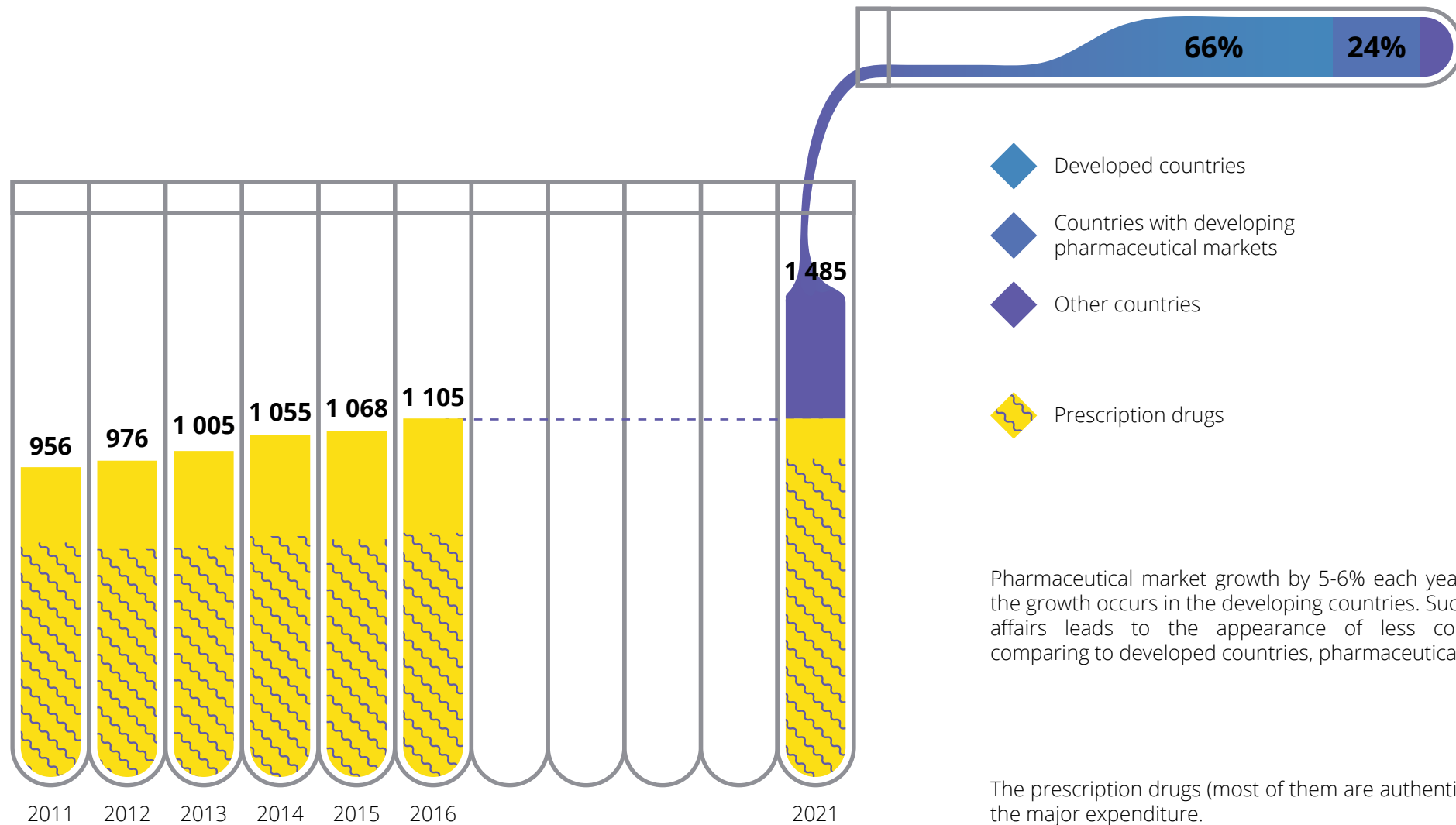
PHARMACY MARKET GROWTH FORECAST

The expected growth of the world expenditure on pharmaceuticals,
bln US dollars

+380

bln US dollars

9%

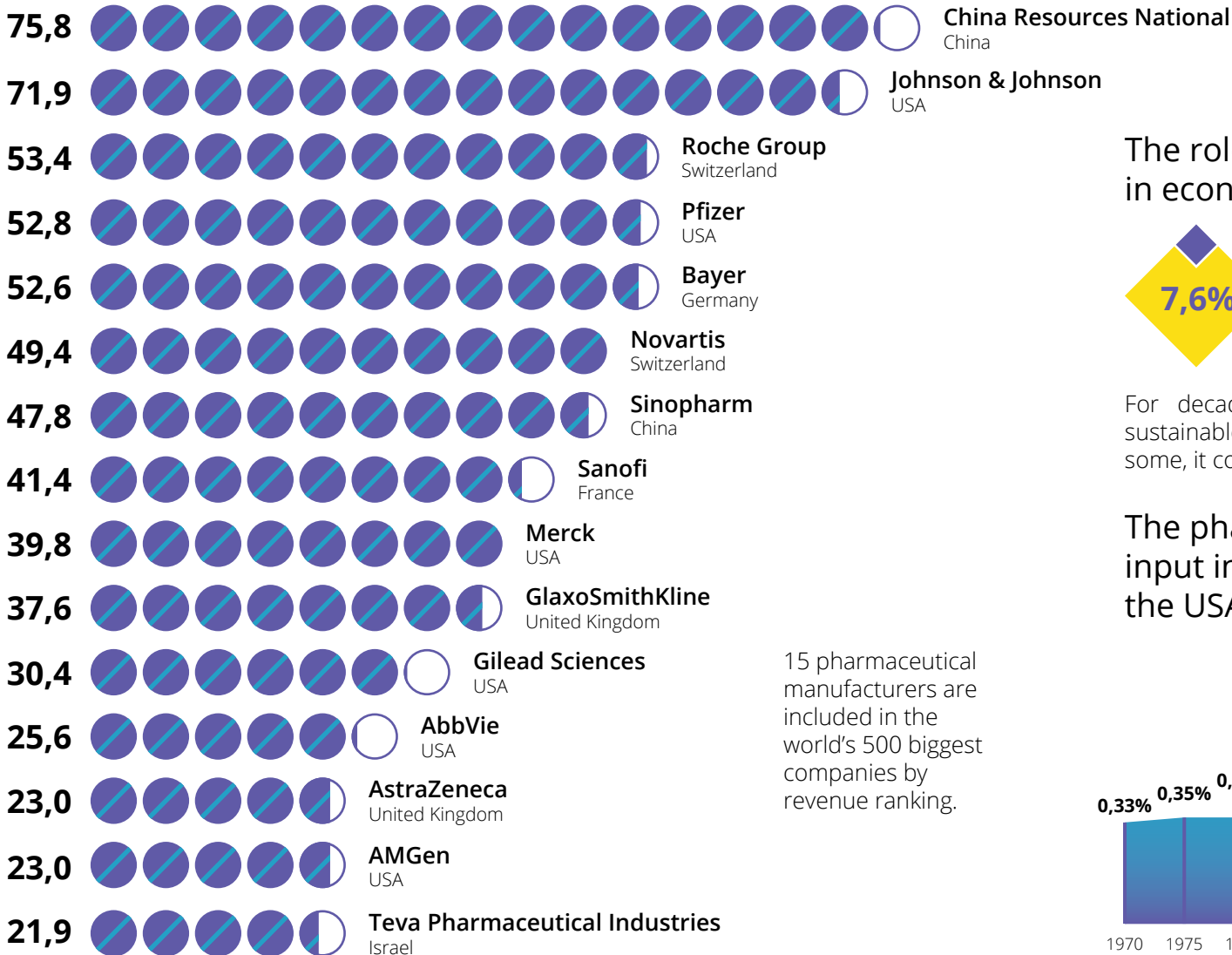


Pharmaceutical market growth by 5-6% each year. 24% of the growth occurs in the developing countries. Such state of affairs leads to the appearance of less competitive, comparing to developed countries, pharmaceutical markets.

The prescription drugs (most of them are authentic) are still the major expenditure.

ROLE OF PHARMACY IN ECONOMY

The world's biggest companies by revenue,
bln US dollars



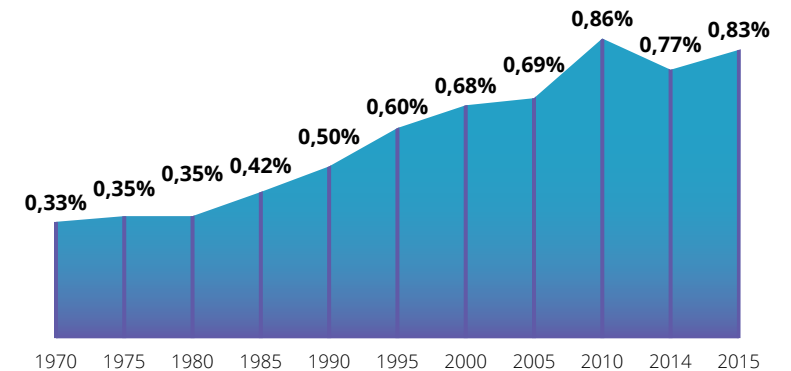
15 pharmaceutical manufacturers are included in the world's 500 biggest companies by revenue ranking.

The role of pharmaceutical manufacturing in economy of Ireland, % of gross value added



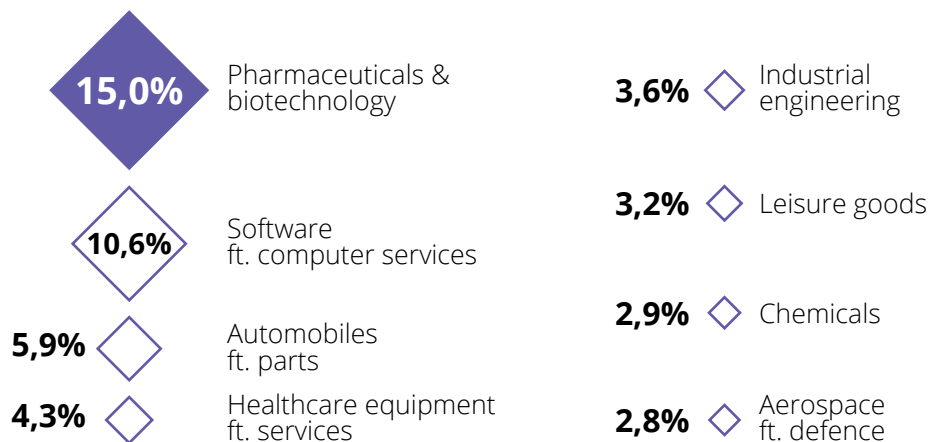
For decades, pharmaceutical manufacturing plays a sustainable role in economies of developed countries. In some, it constitutes a significant share.

The pharmaceutical manufacturing input into establishing added value in the USA, %



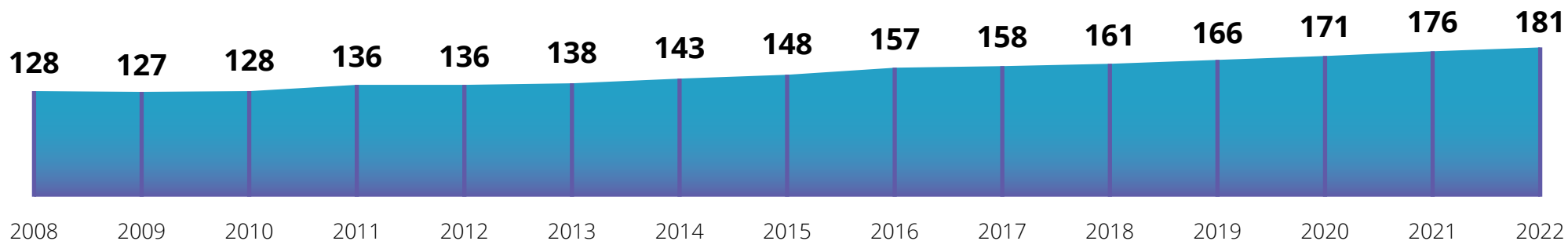
PHARMACY IS AN INVESTMENT LEADER

Ranking of industrial sectors by overall sector R&D intensity in 2015*, %
(R&D as percentage of net sales)



The pharmaceutical industry holds leading position regarding income based on R&D investment.

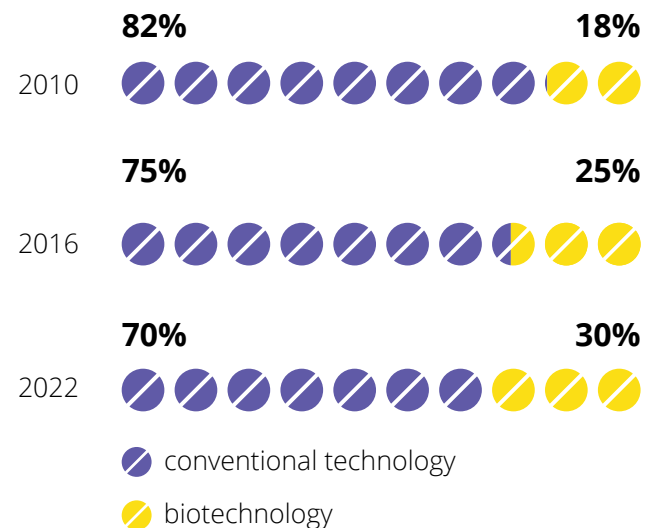
Worldwide total pharmaceutical R&D spend forecast, bln US dollars



Source: EFPIA, Evaluate Group

*Data relate to the top 2500 companies ranked by total worldwide R&D investment.

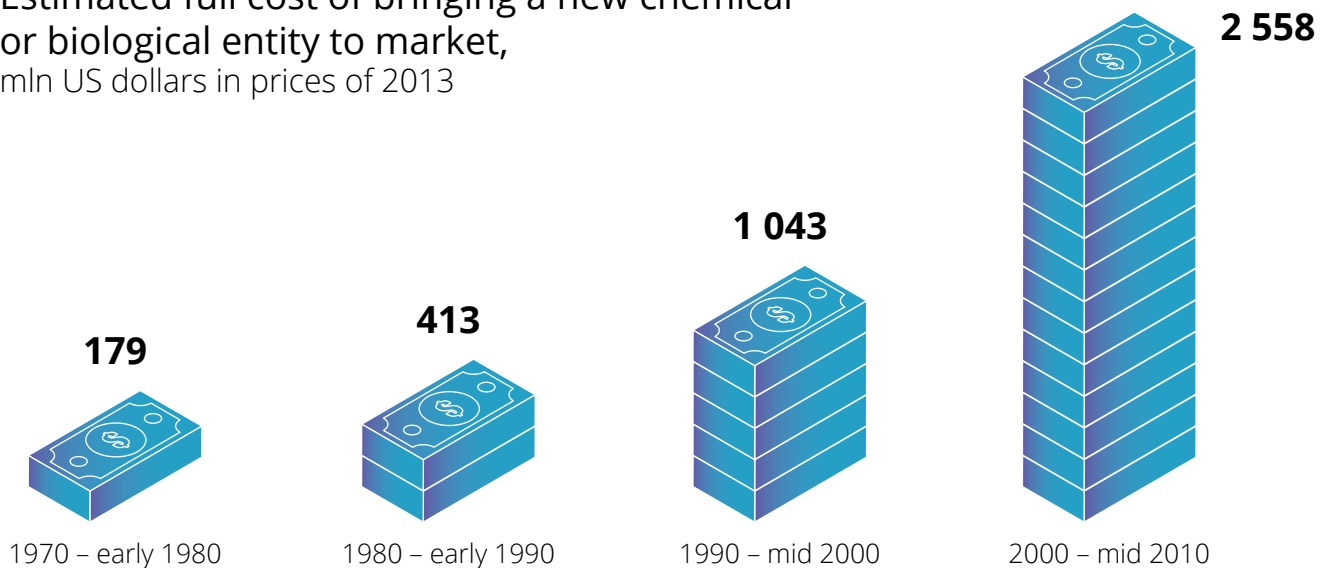
Worldwide prescription drug & OTC pharmaceutical sales by technology, %



Pharmacy is a science-intensive industry. Its technological capability constantly develop. Thus investment in pharmacy is increasing.

NEW DRUG DISCOVERY SPENDINGS

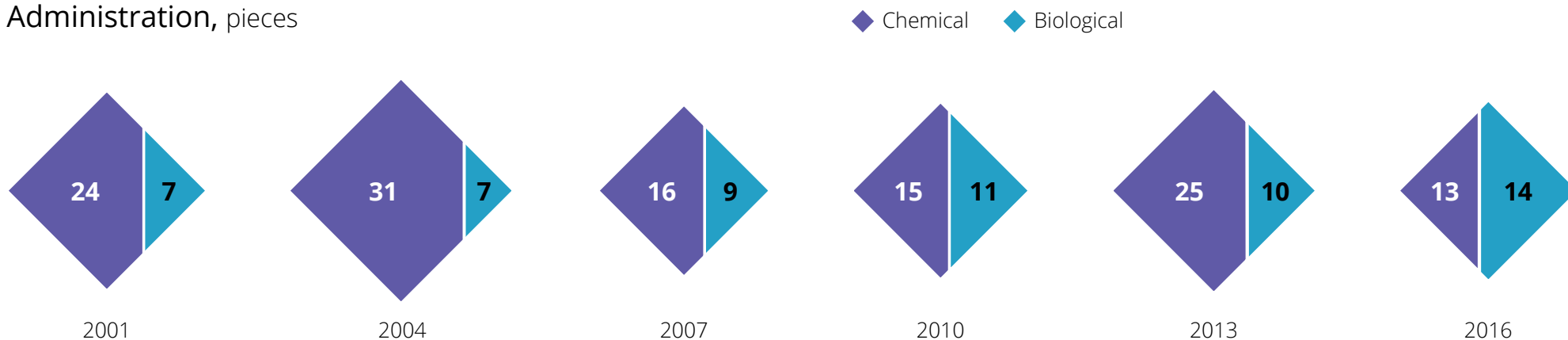
Estimated full cost of bringing a new chemical or biological entity to market, mln US dollars in prices of 2013



On average, one drug development process lasts for 12-13 years and costs more than \$2,5 bln.

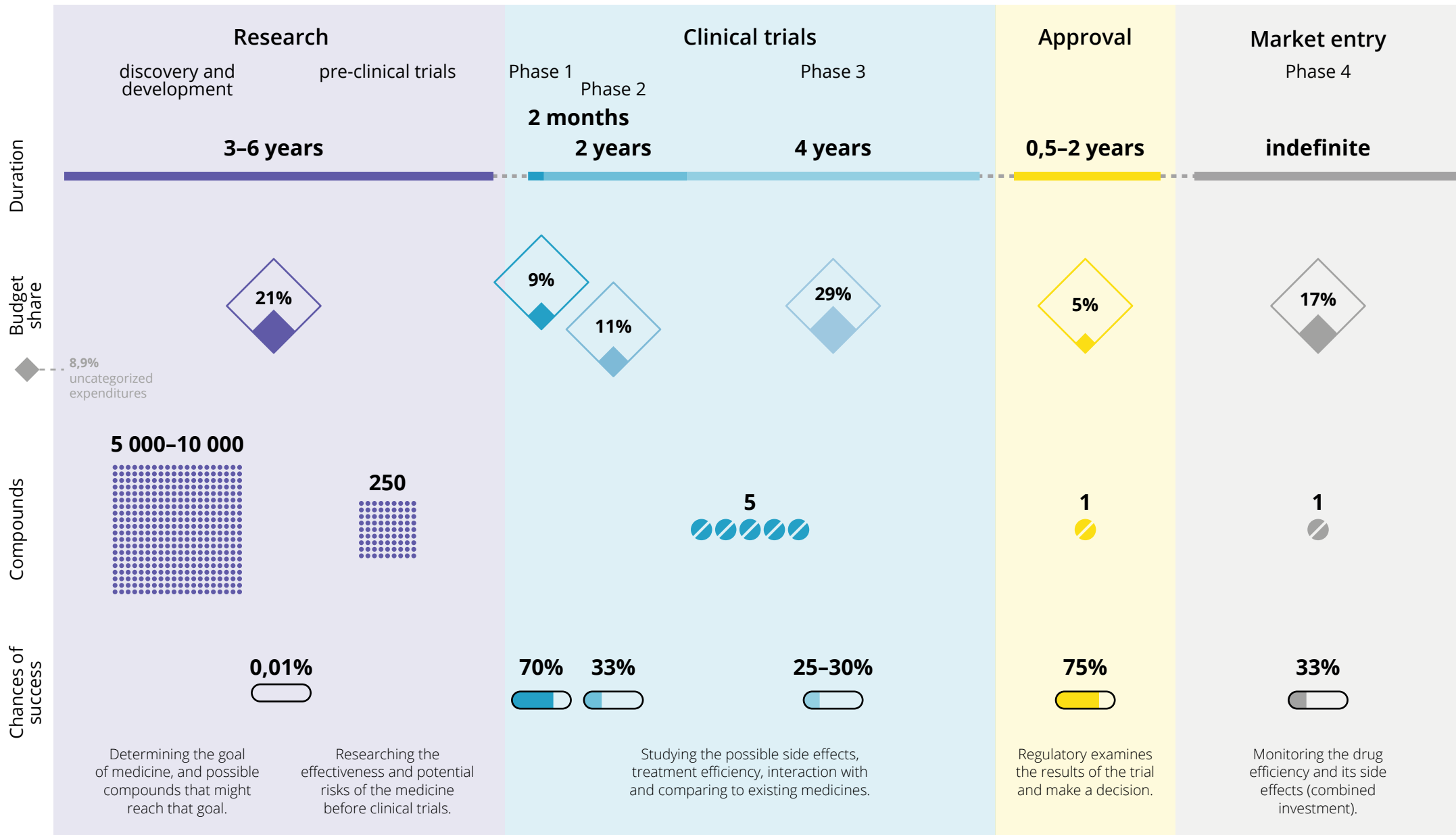
In order to stimulate an investment, the manufacturer gets a patent, which ensures an exclusive right to production and sales. In the USA, as well as in Ukraine, the term of the patent is 20 years.

Number of new drugs approved by US Food and Drugs Administration, pieces



NEW DRUG DEVELOPMENT

New medicine development process in developed countries

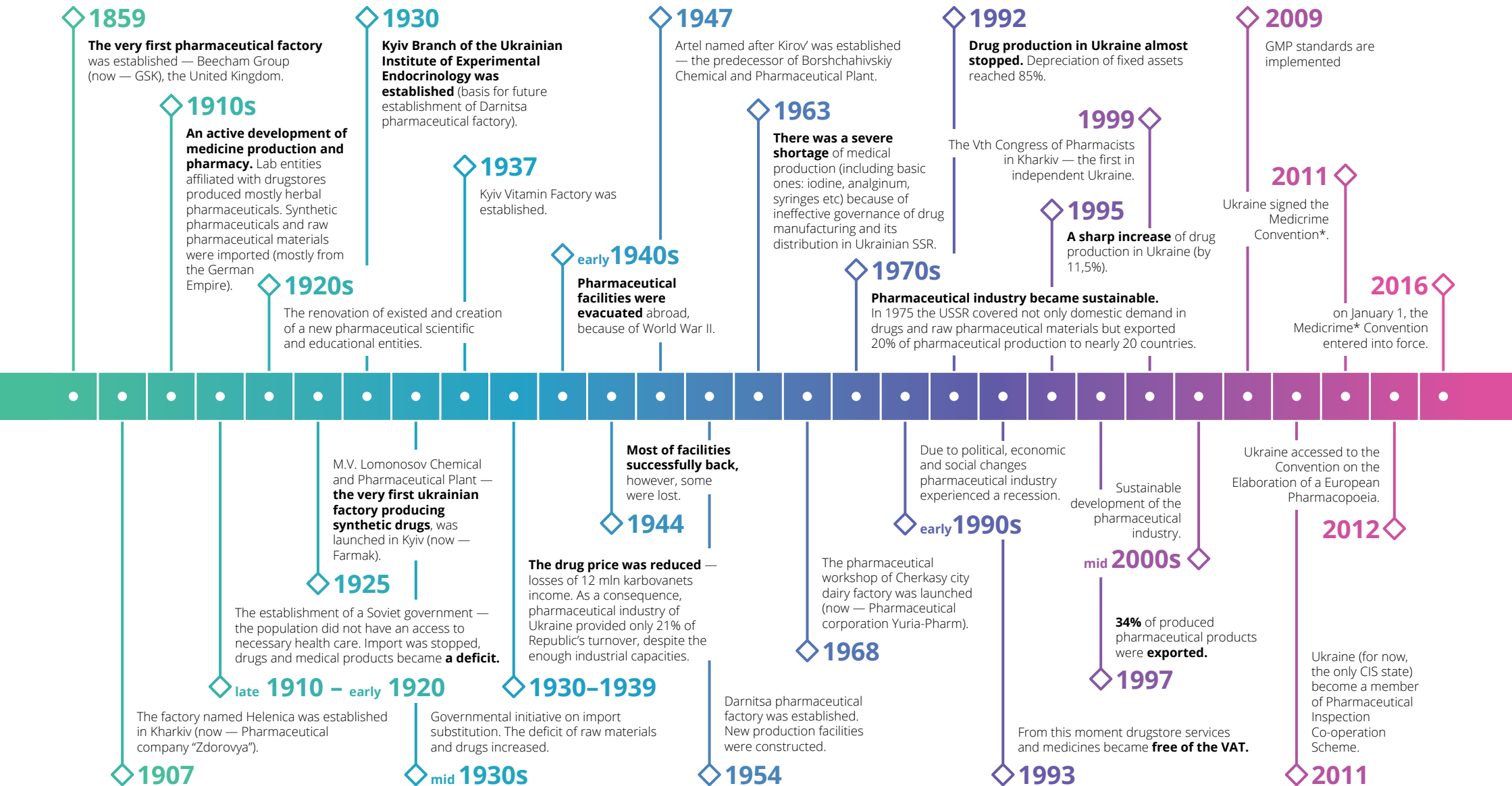


Source: EFPIA, IFPMA, FDA

The background of the image is a dense, repeating pattern of white, pill-shaped icons. Each pill is outlined in a teal color and has a small vertical line down its center, representing a score line. The pills are scattered across the entire frame, creating a textured, medical-themed background.

THE PHARMACEUTICAL INDUSTRY IN UKRAINE

HISTORY OF THE INDUSTRY



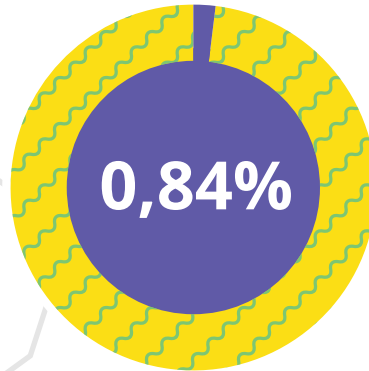
Source: Pharmaphorum, PAT Farmak, PrAT Darnitsa pharmaceutical factory

*Council of Europe Convention on the counterfeiting of medical products and similar crimes involving threats to public health.

PHARMACY IN UKRAINIAN ECONOMY

Production of pharmaceuticals
in 2016, % of GDP

20,1
bln hryvnias



Number of employees
in the pharmaceutical industry in 2017,
% of the total number

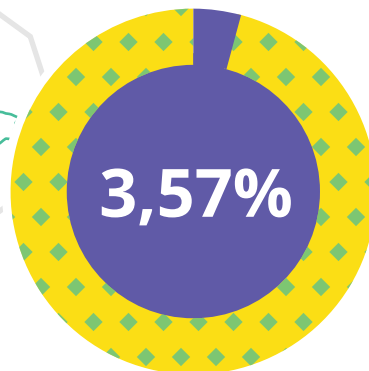
0,29%



23,3
ths people



1 767
bln US dollars

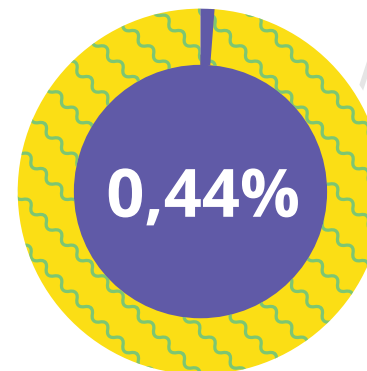


Import of pharmaceuticals
in 2017, % of total import

0,44%



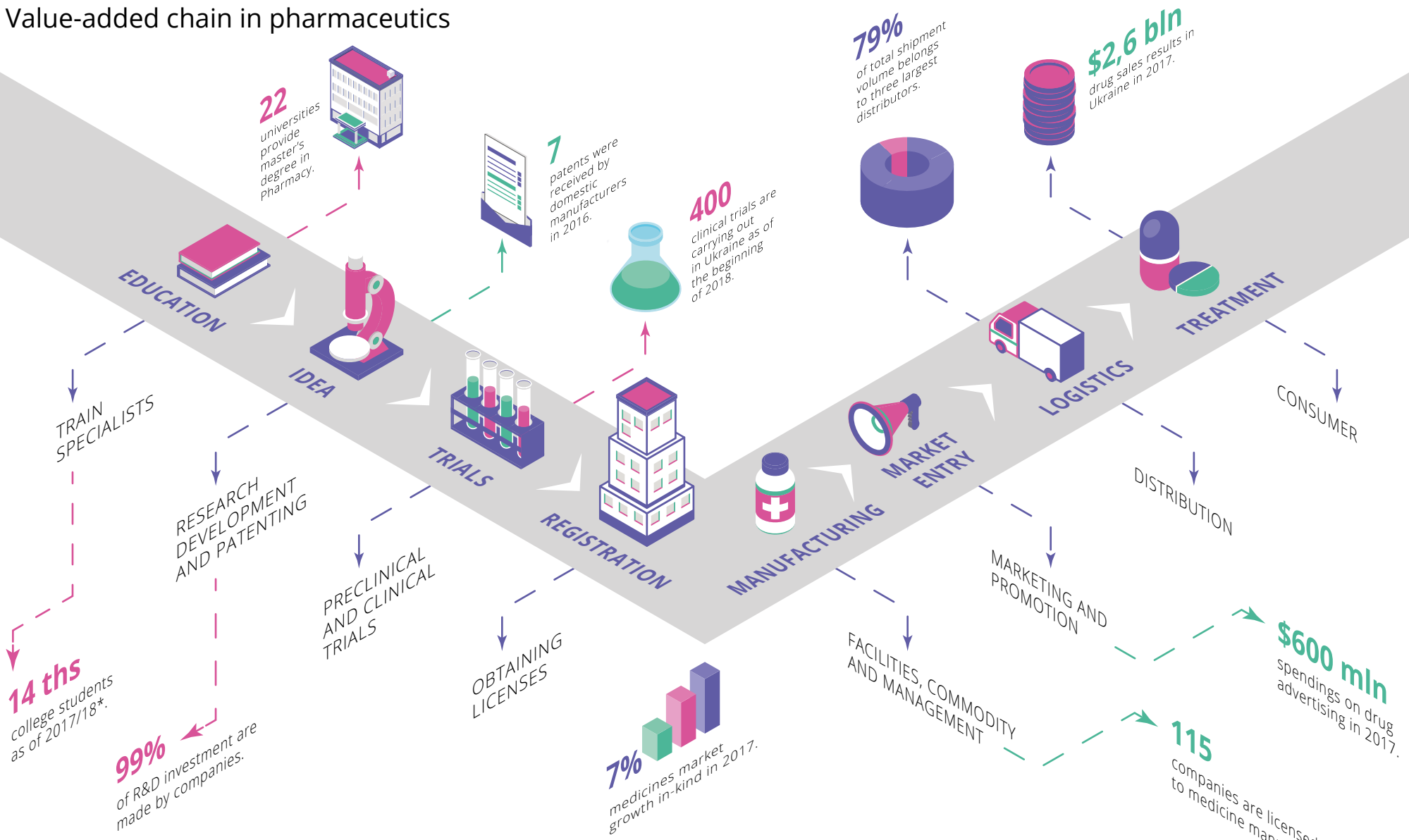
192
bln US dollars



Export of pharmaceuticals
in 2017, % of total export

DRUG DEVELOPMENT PROCESS

Value-added chain in pharmaceuticals



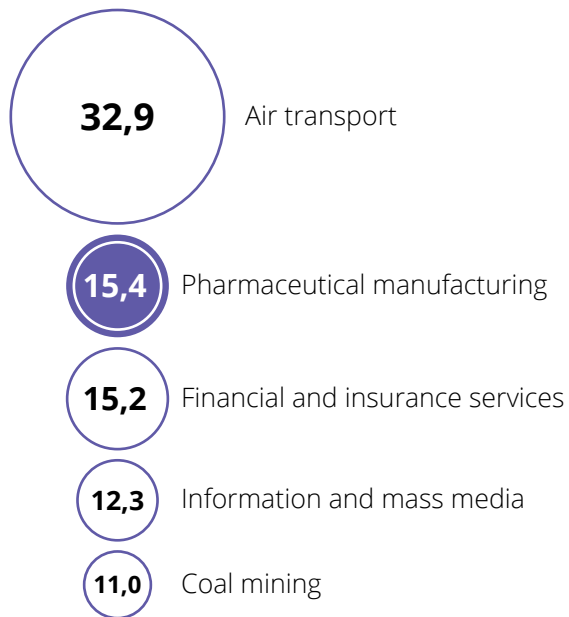
Source: SSC of Ukraine, SMDC

*pharmaceutical and pharmacy industry departments (universities, academies, institutions)

**as of the first quarter 2018

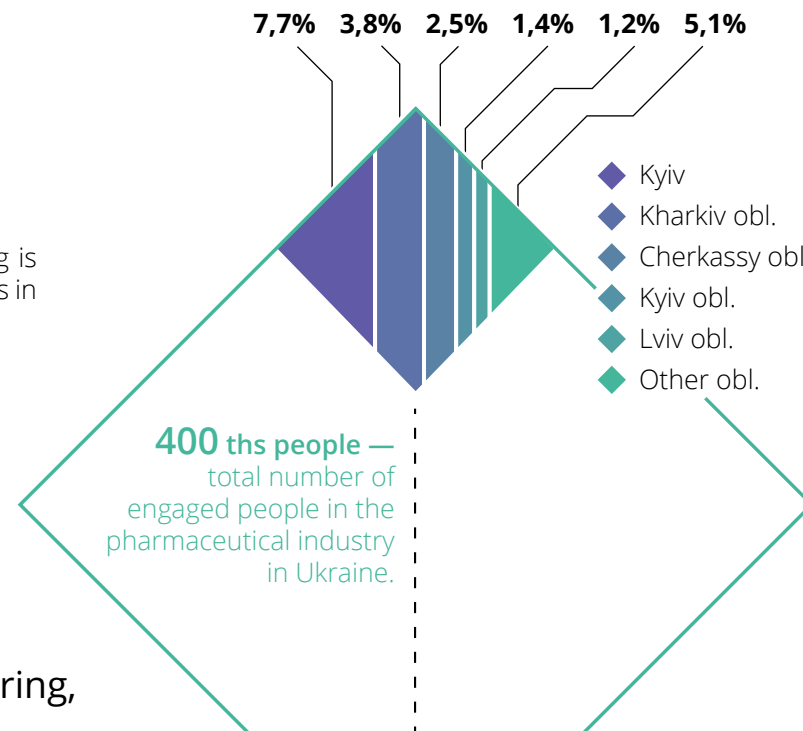
PHARMACEUTICS IS A GOOD EMPLOYER

TOP-5 industries by an average monthly wage in January 2018, ths hryvnias

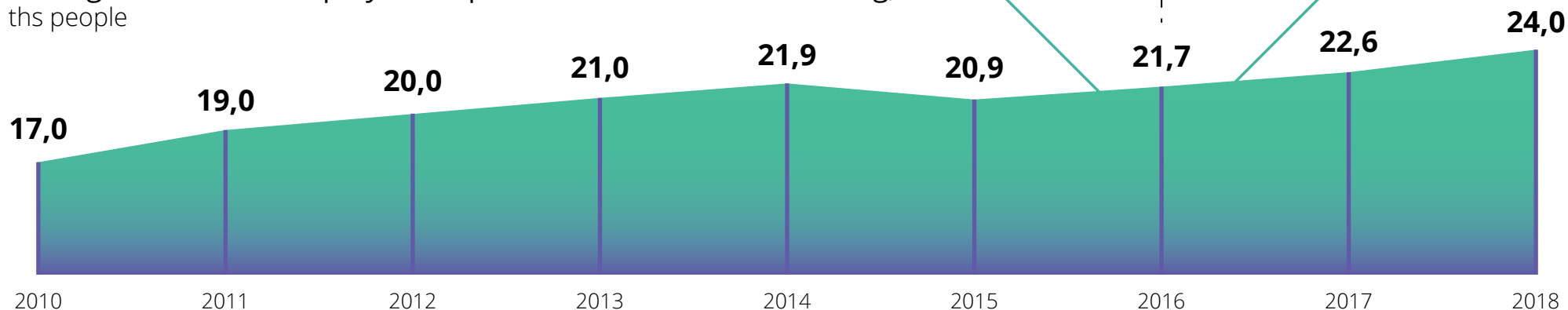


Pharmaceutical manufacturing is one of the most paid industries in Ukraine.

Regional breakdown of employees in 2016, %

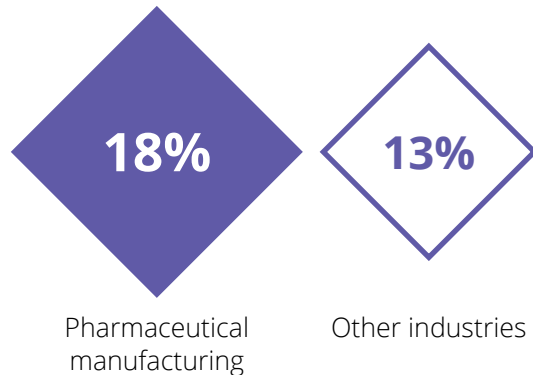


Average number of employees in pharmaceutical manufacturing, ths people



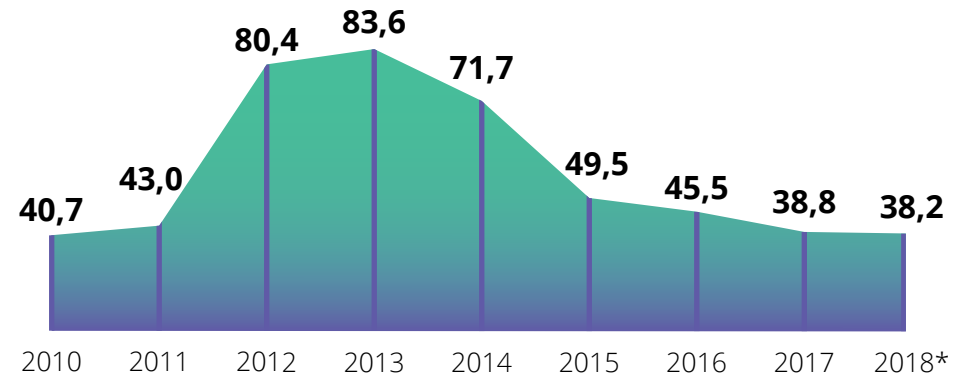
INVESTMENT IN PHARMACY

Compound annual growth rate of capital investment in 2010–2017, %

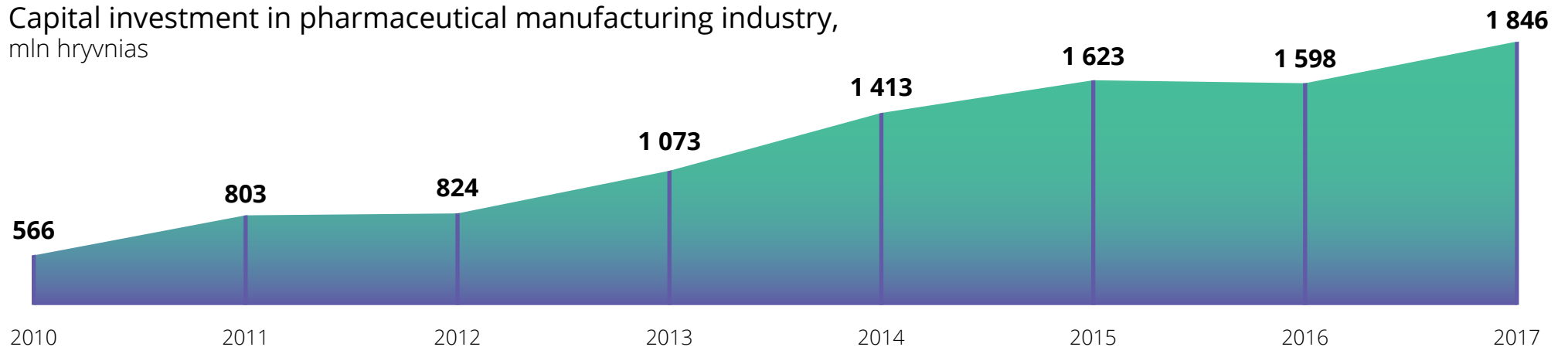


Pharmaceutical industry shows high tempo of capital investment growth, comparing to total investment. The growth of investment in 2014–2015 proves the reliability and stability of the industry.

Direct foreign investment as of 1 January, mln US dollars

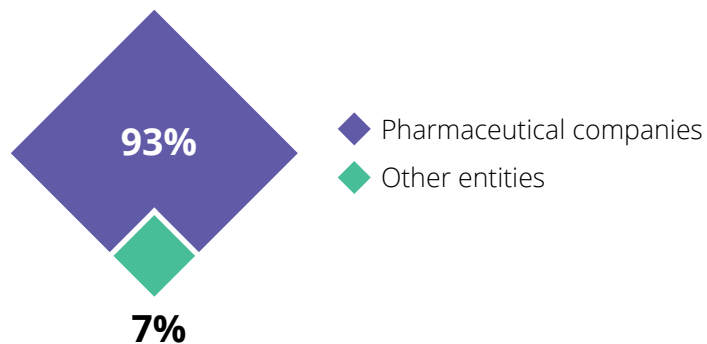


Capital investment in pharmaceutical manufacturing industry, mln hryvnias



CLINICAL TRIALS

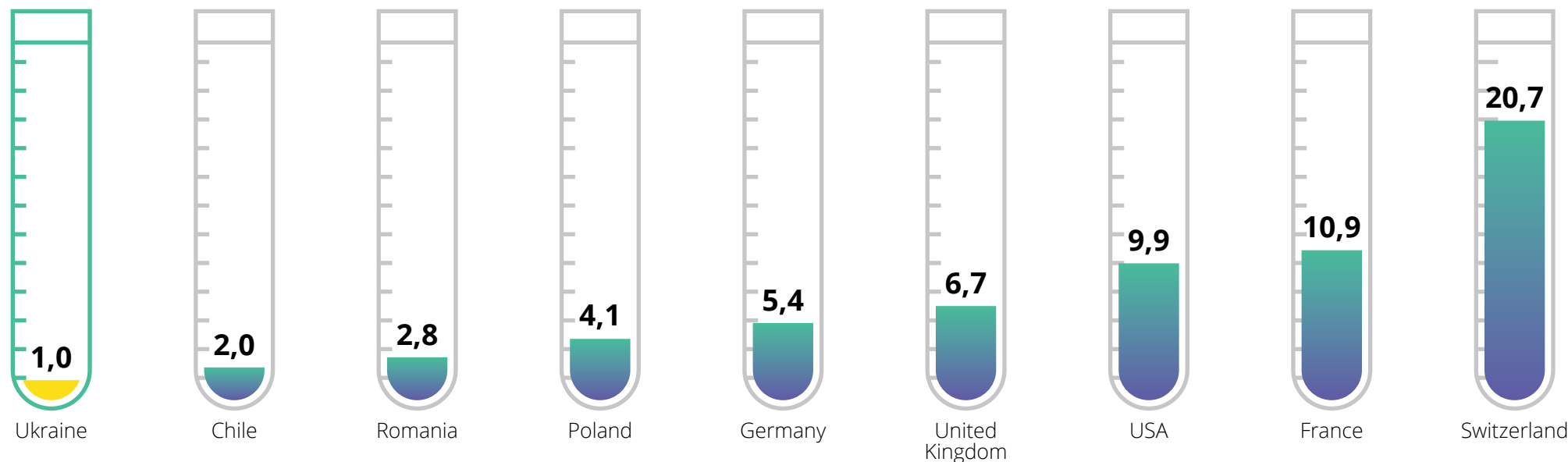
Financing structure of clinical trials in Ukraine*, %



Clinical trials provide an advantage for both the state and a patient. The patient gets free healthcare services and innovative medicines. While the state does not pay for seriously ill patients treatment. In addition, clinical trials are also an opportunity for further drug registration without supplementary research and investment in medical facility infrastructure.

The low number of clinical trials in Ukraine is caused by complex regulation, unreliable IP protection, and drug research taxation.

Number of Clinical Trials by Countries* per 100th of population



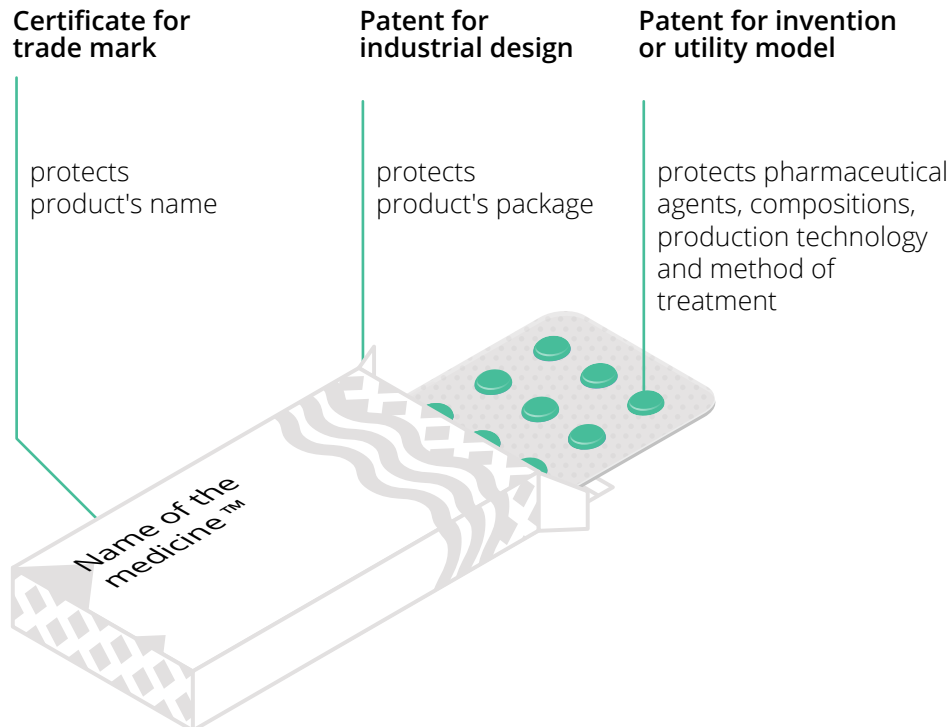
Source: ClinicalTrials.gov

*those are continuing as of the end of the first quarter 2018

Why pharmaceutical company should care about intellectual property?

- to protect its unique brand
- to protect technologies
- to fully monetize own developments

IP protection mechanisms in pharmaceutical industry



Source: Aequo

Lawsuits related to IP

Lawsuits from the holders of the IP rights



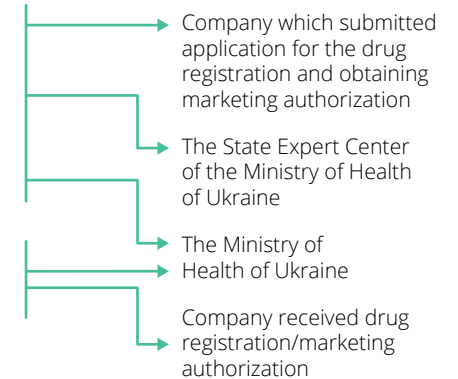
At the stage of drug registration

filed to prevent drugs from being registered

Concerning already registered drugs

filed to prevent or ban drug sales, including tender sales

Respondents



Lawsuits against the holder of the IP rights



to cancel documents providing title to IP:

- Certificate for trademark
- Patent for industrial design
- Patent for invention or utility model



Specifics of litigation in pharmaceutical industry

- ◆ **Preliminary injunction measures are widely used** Prohibition of issuing recommendations on drug registration, prohibition of import and drugs clearance etc.
- ◆ **Most cases are followed by forensic examination** Requires specific expertise in areas of IP, chemistry and biology.
- ◆ **Competitors might get an access to registration dossier** Which is usually requested by the court during cases about violation of right on invention and utility model.

PHARMACEUTICAL MANUFACTURERS

Regional breakdown of pharmaceutical manufacturers as of March 2018

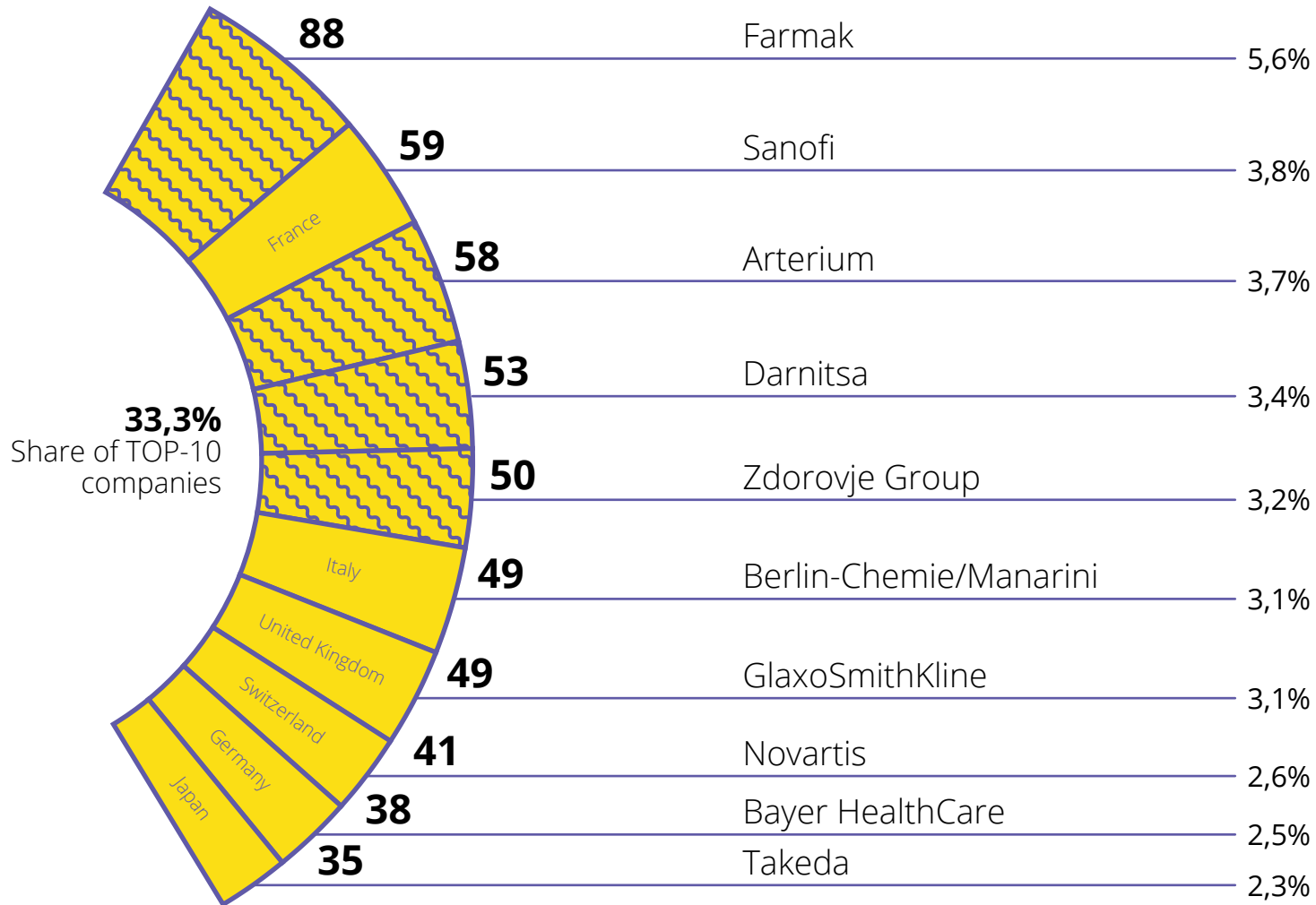
★ — one entity



There are
115 licensed companies,
manufacturing medicines in Ukraine.

LEADERS OF UKRAINIAN PHARMACY MARKET

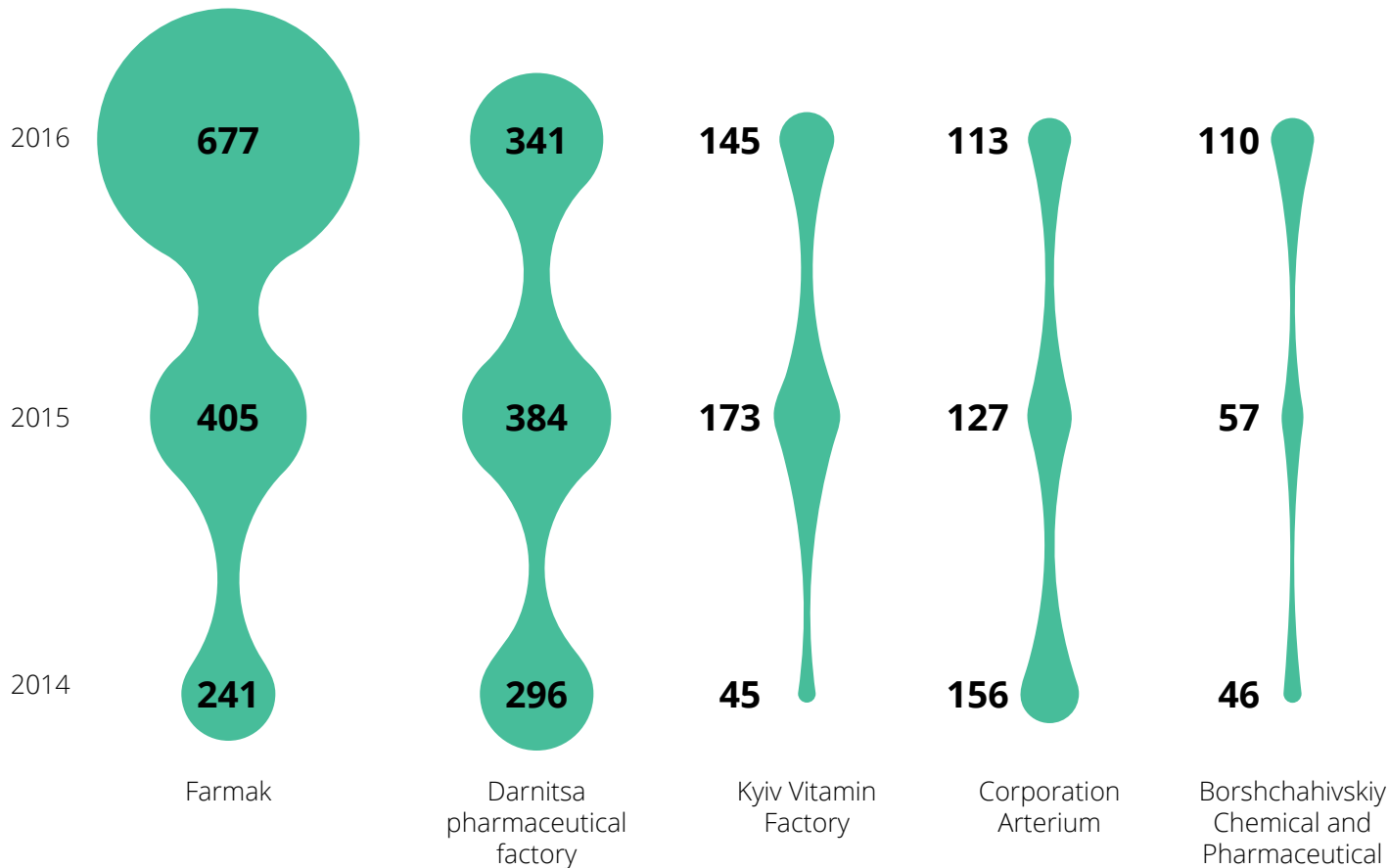
TOP-10 companies based on sales* of pharmaceuticals** in 2016,
mln US dollars (pharmacy purchase price)



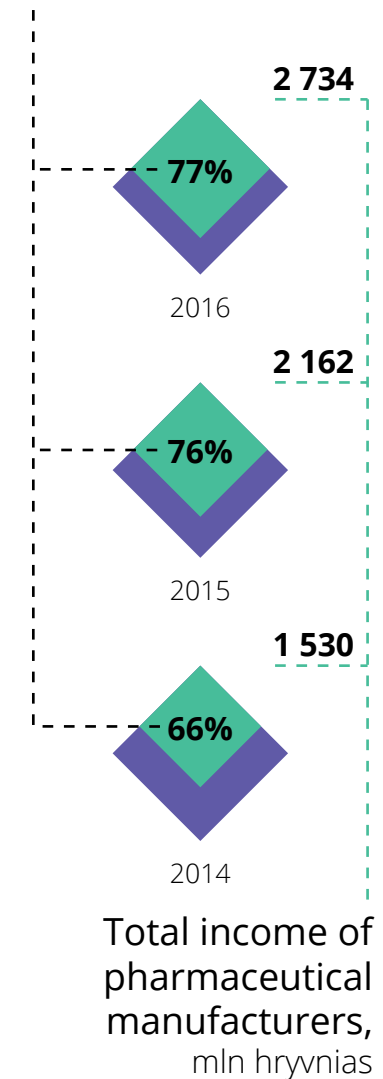
Ukrainian companies are the main players on domestic market.

FINANCIAL RESULTS OF PHARMACY

Leaders among joint-stock companies by revenue, mln hryvnias



Share of pharmaceutical companies which were profitable of total number, %



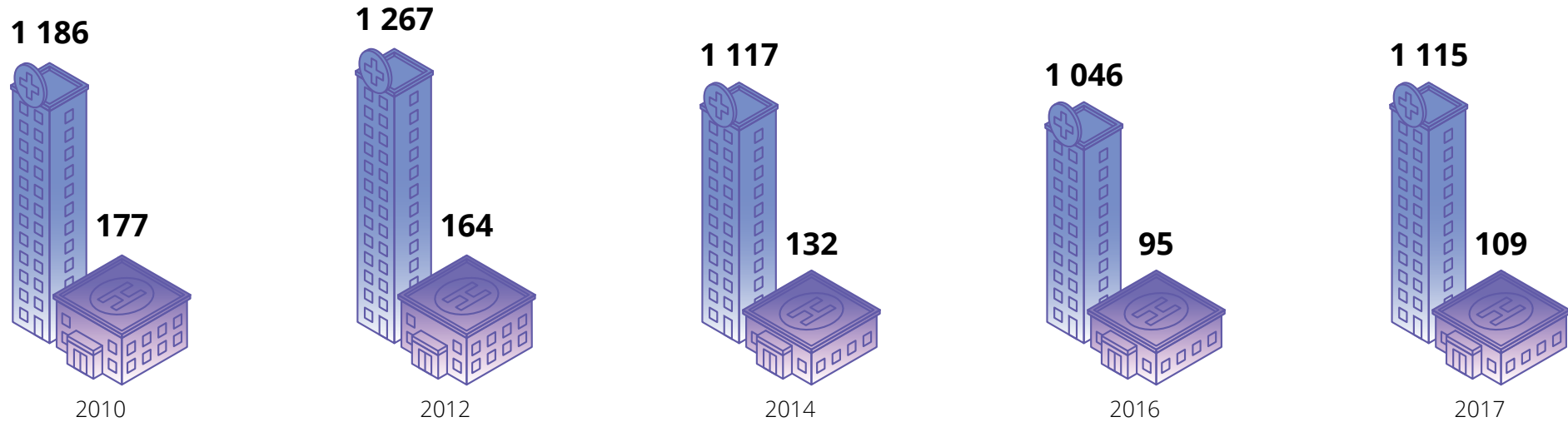
The background of the entire image is a dense, repeating pattern of light blue pills. Each pill is depicted with a simple line-art style, showing a central vertical groove and rounded ends. The pills are scattered across the frame, creating a textured, medical-themed background.

PHARMACY MARKET OF UKRAINE

UKRAINIAN PHARMACY MARKET DYNAMICS

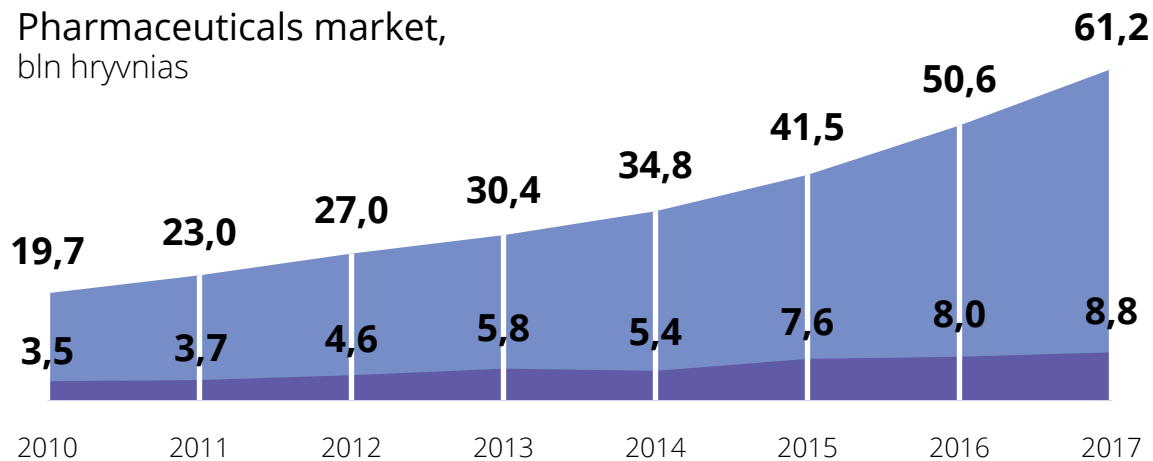
Drug sales, mln packages

■ Retail ■ Hospital procurement

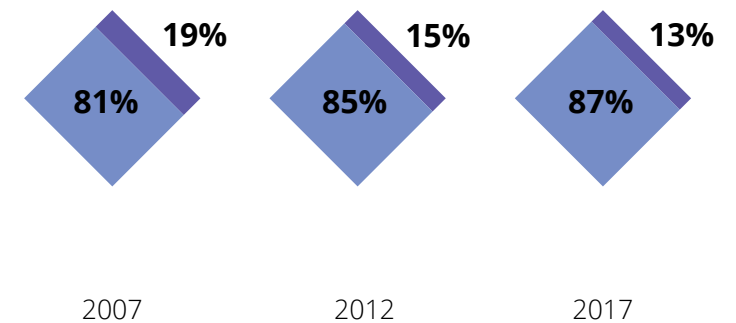


Drug sales have a positive tendention and slightly get the pre-crisis level.

Pharmaceuticals market, bln hryvnias



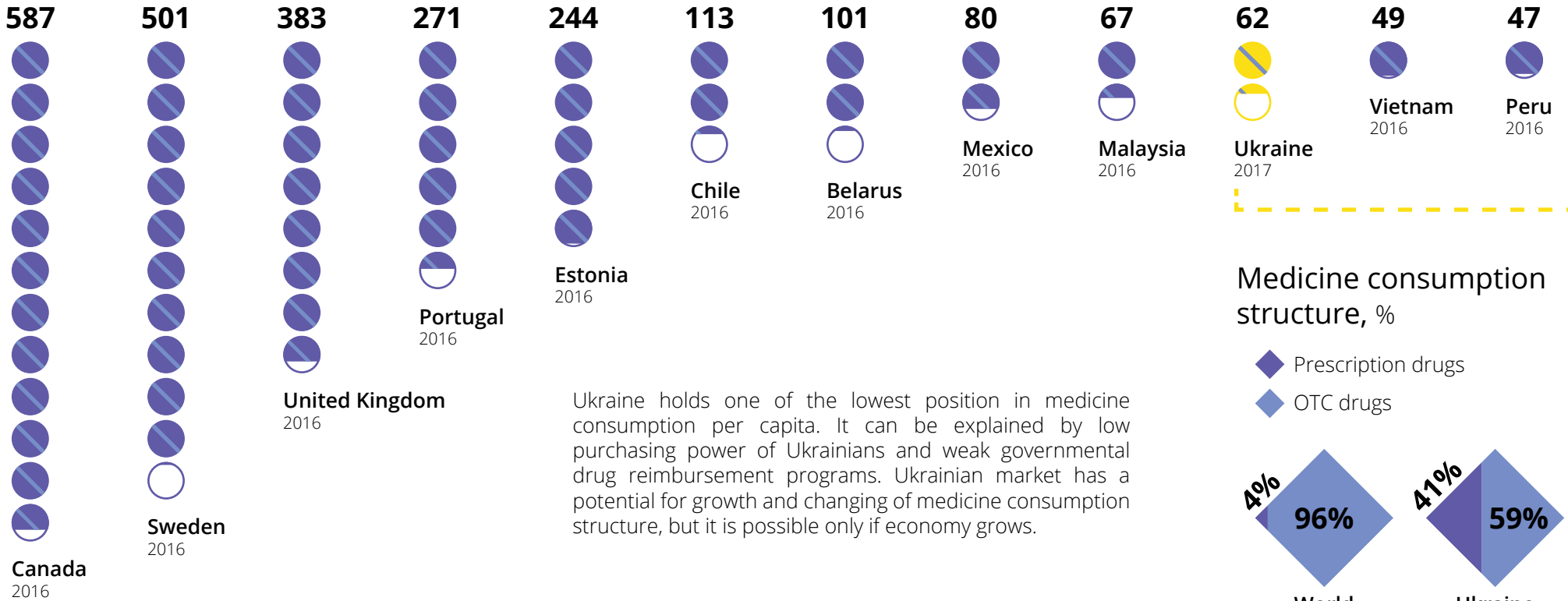
Drug sales structure in money terms, %



Source: Ezhenedelnik Apteka 1-12

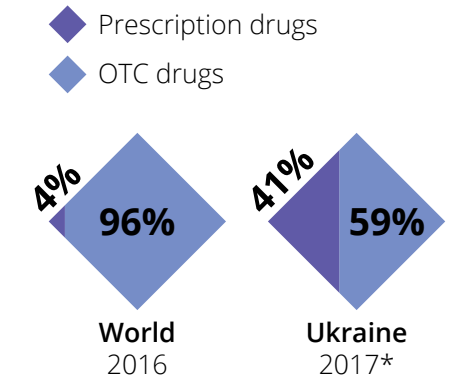
PHARMACEUTICAL CONSUMPTION

Medicine consumption by countries, US dollars per capita

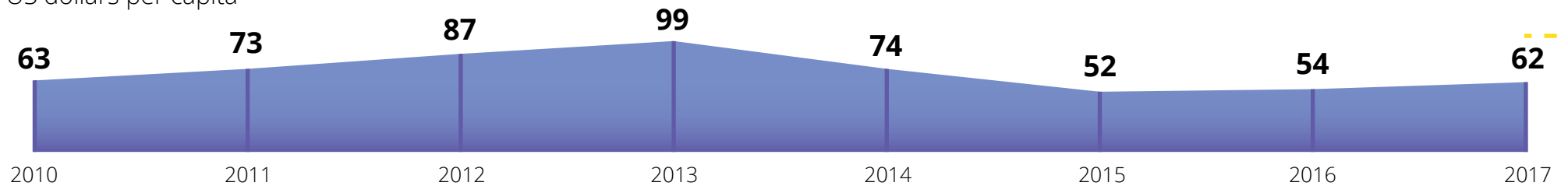


Ukraine holds one of the lowest position in medicine consumption per capita. It can be explained by low purchasing power of Ukrainians and weak governmental drug reimbursement programs. Ukrainian market has a potential for growth and changing of medicine consumption structure, but it is possible only if economy grows.

Medicine consumption structure, %



Medicine consumption in Ukraine, US dollars per capita

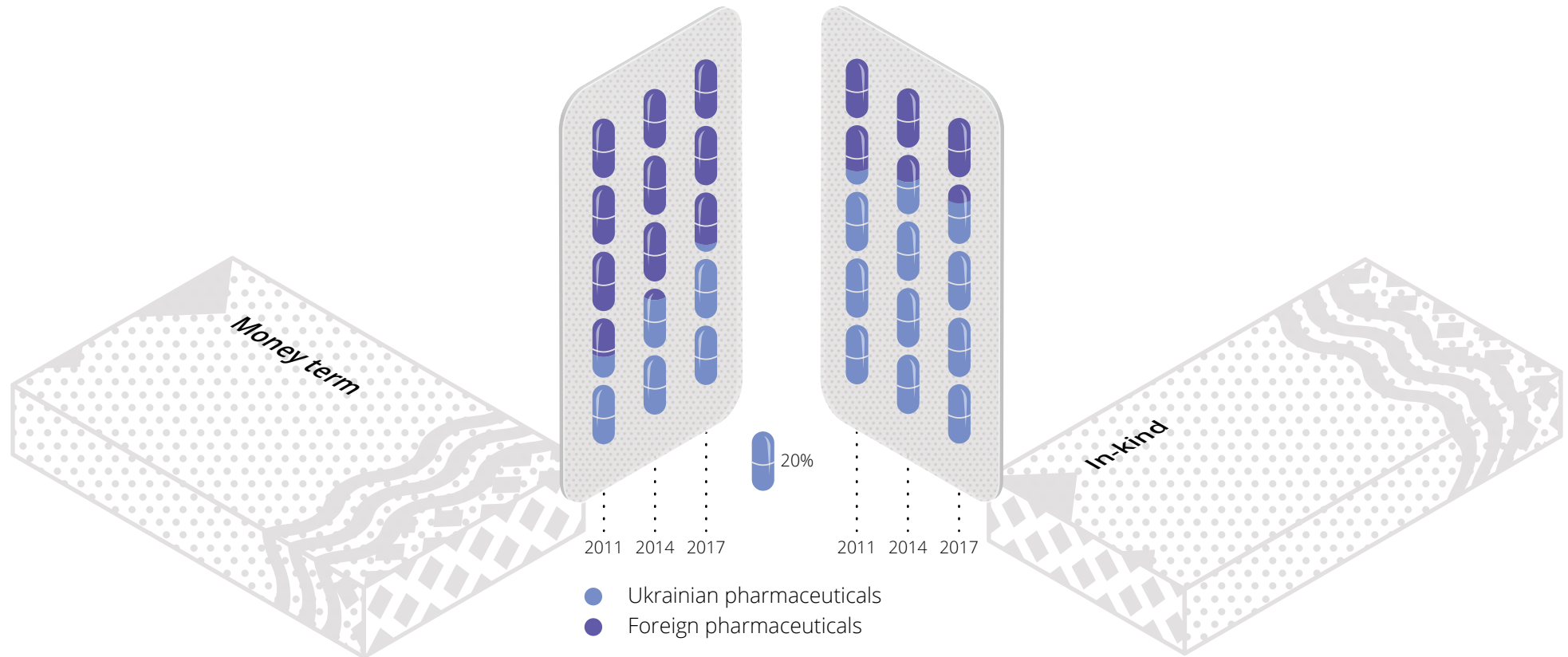


Source: Ezhenedelnik Apteka¹⁻¹², Evaluate Group, PharmaBoardroom, OECD, International Trade Administration

*only retail sales (87.4% of total)

RETAIL MARKET STRUCTURE

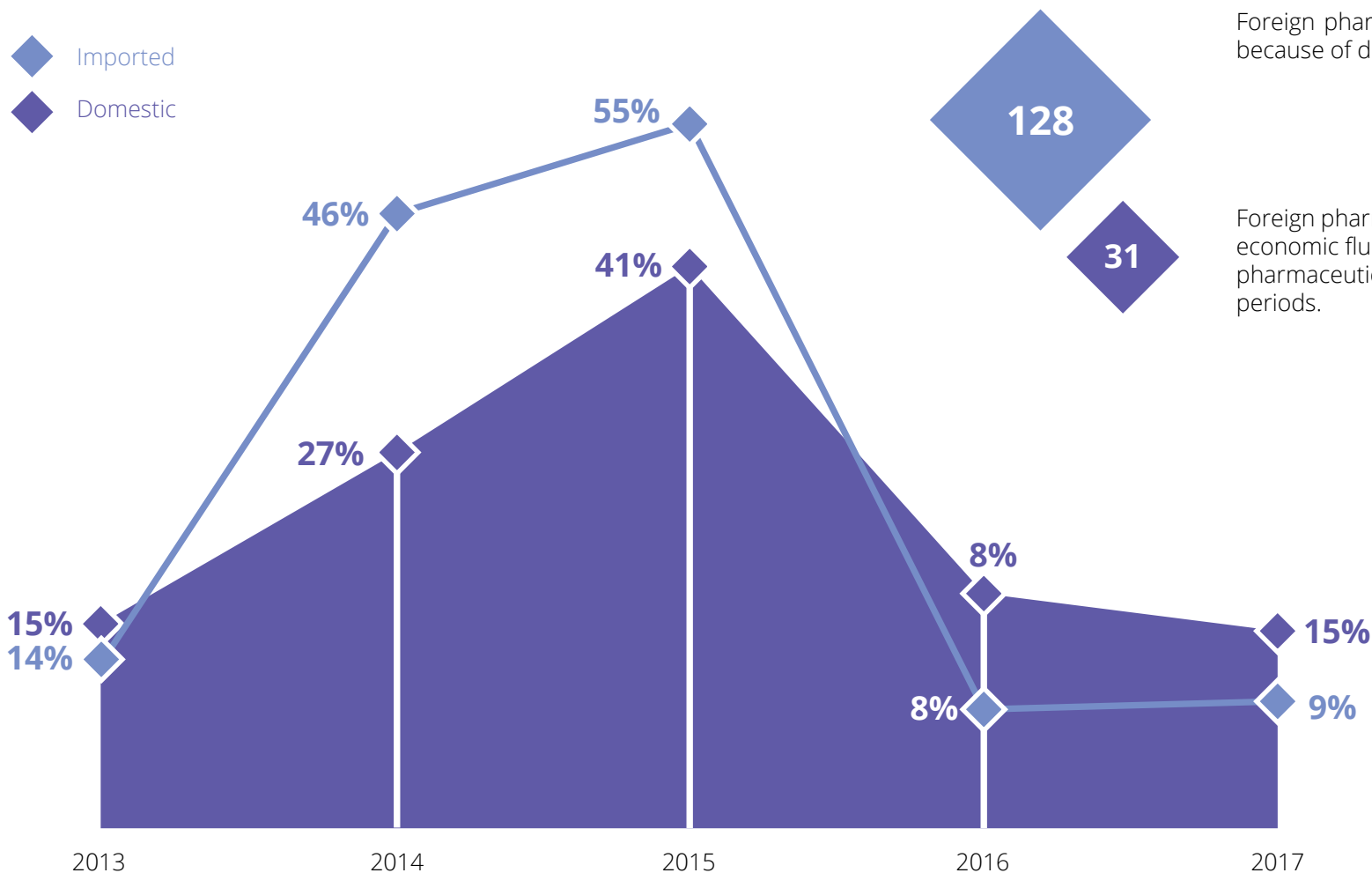
Pharmacy sales structure divided by the holder of license, %



DRUG PRICE DYNAMICS IN UKRAINE

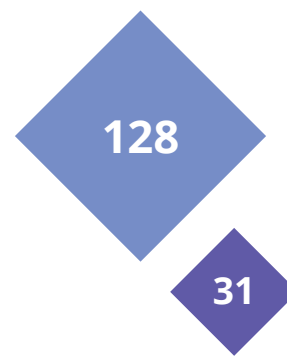
Pharmaceutics price changes divided by the holder of license, retail sales, %

One package average price by holder of license in 2017, hryvnias



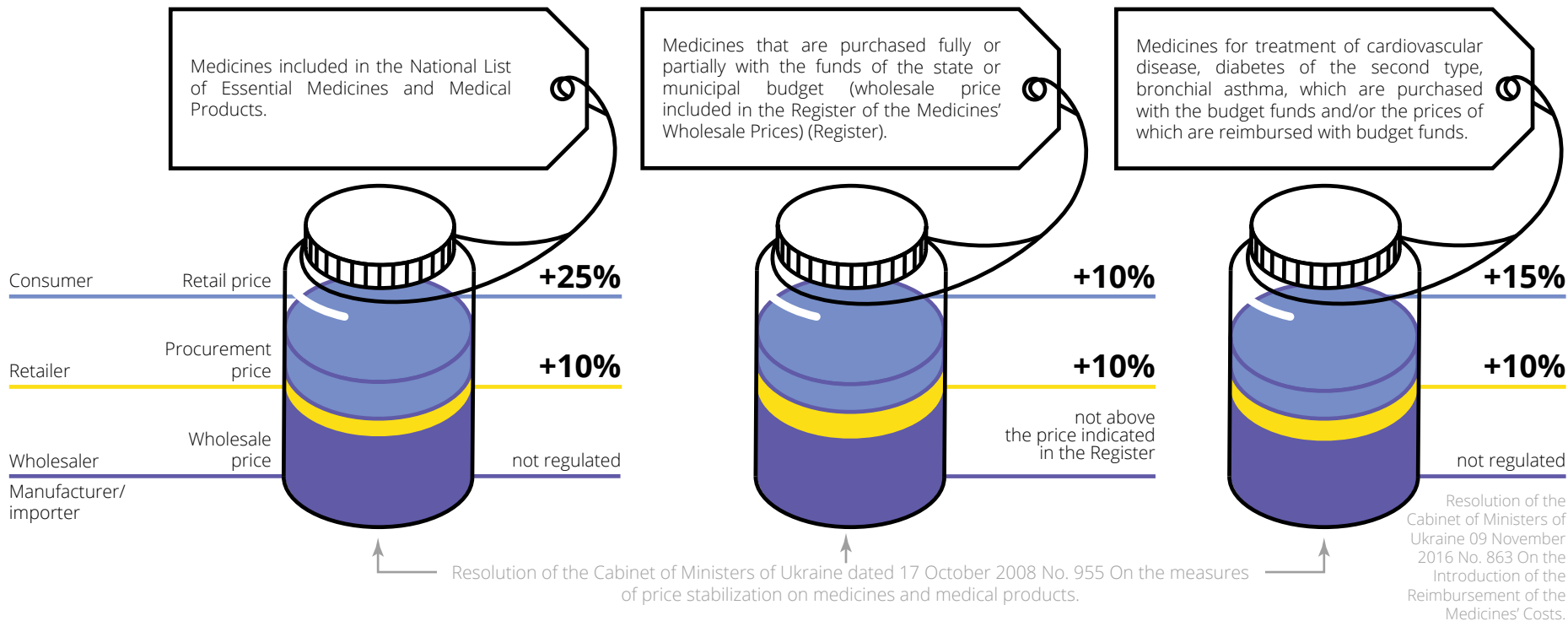
Foreign pharmaceuticals are more expensive because of distinct composition.

Foreign pharmaceuticals are more sensitive to economic fluctuations, whether domestic pharmaceuticals counter inflation equally by periods.



MEDICINES PRICE REGULATION

Maximum Markup on some Groups of Medicines established by the Law, %



The price control is carried out through inspections (both scheduled and unscheduled) of the State Service of Ukraine on Food Safety and Consumers Protection.



The moratorium on inspections of business operations is in force until 31 December 2018.

The Law of Ukraine "On temporary peculiarities of exercising state oversight (control) of business operations"



Until 31 December 2018 an unscheduled inspections may be held in case of:

- reasonable request of an individual;
- written request of an entity (voluntary);
- court decision.



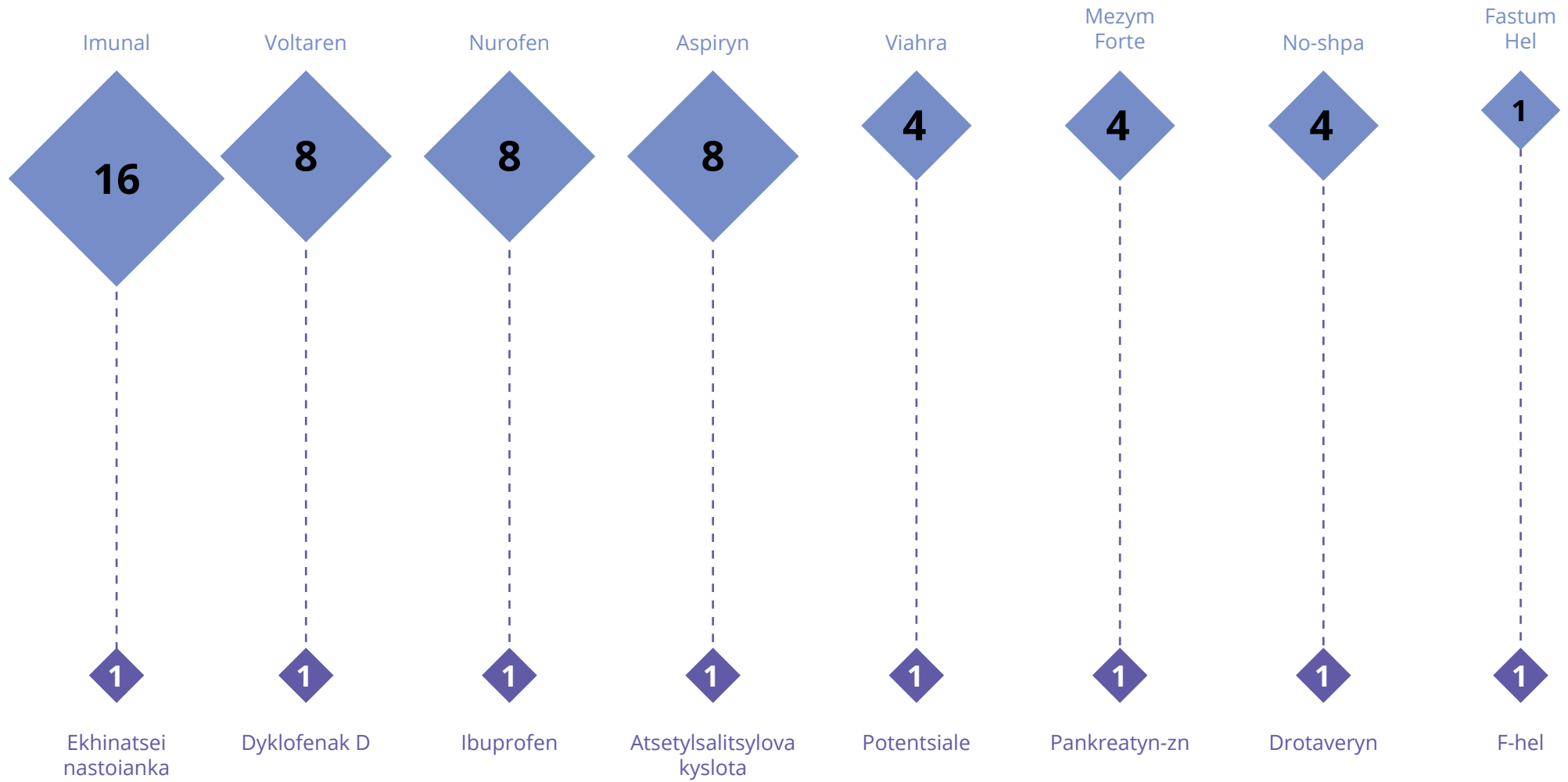
In case of price control violations:

- the expropriation of the improperly obtained revenue;
- fine of 100% of the improperly obtained revenue.

UKRAINIAN EQUIVALENTS*

Comparison of the price of domestic and foreign pharmaceuticals

◆ Imported drugs ◆ Domestic drugs

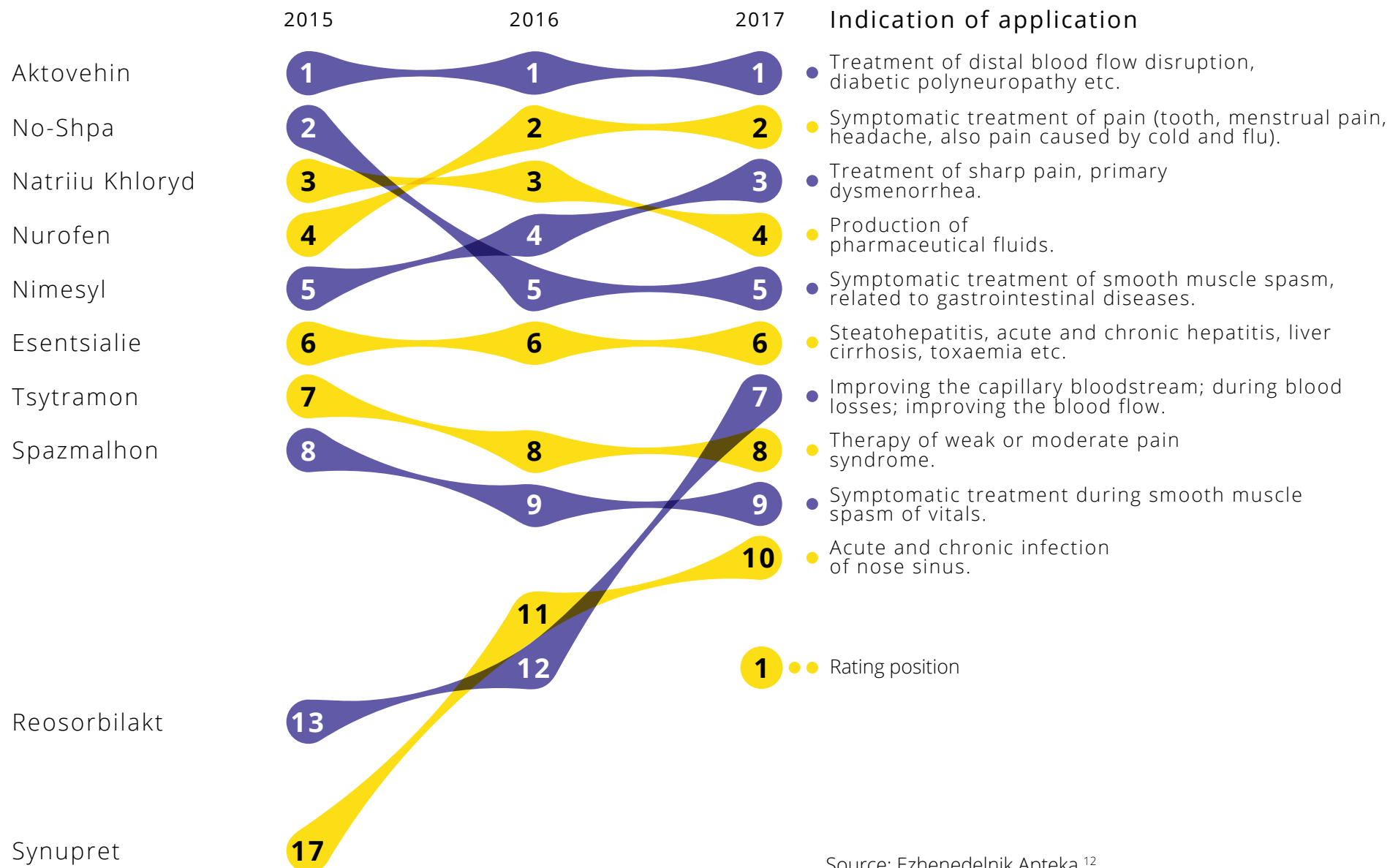


Source: based on open data

*does not mean full biological compliance

MOST POPULAR DRUGS IN UKRAINE

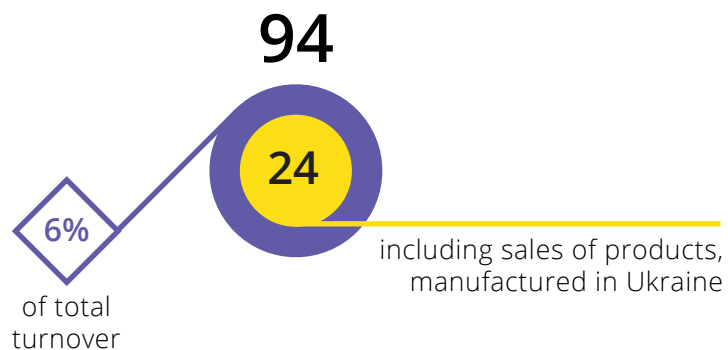
Leaders of pharmacy sales (in money terms)



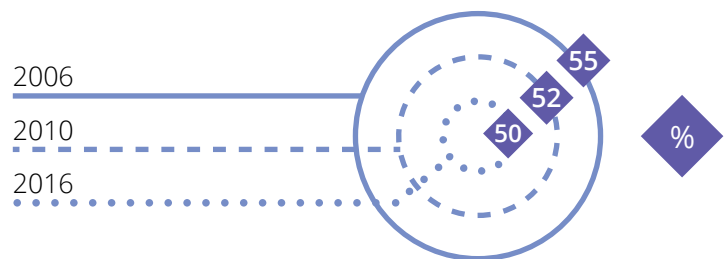
Source: Ezhenedelnik Apteka ¹²

SALES OF PHARMACEUTICAL PRODUCTS

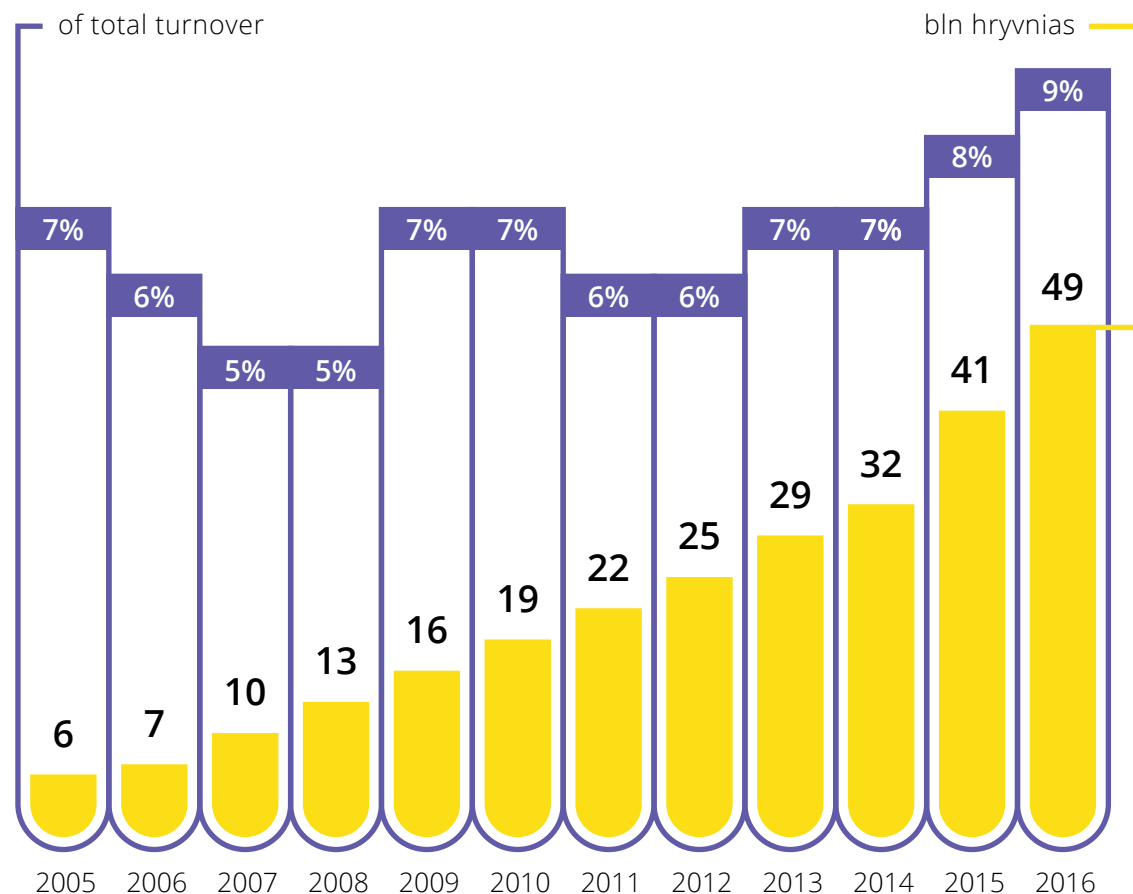
Wholesale turnover of pharmaceutical products in 2016, bln hryvnias



Share of pharmaceutical products*, sold by entities' distribution network

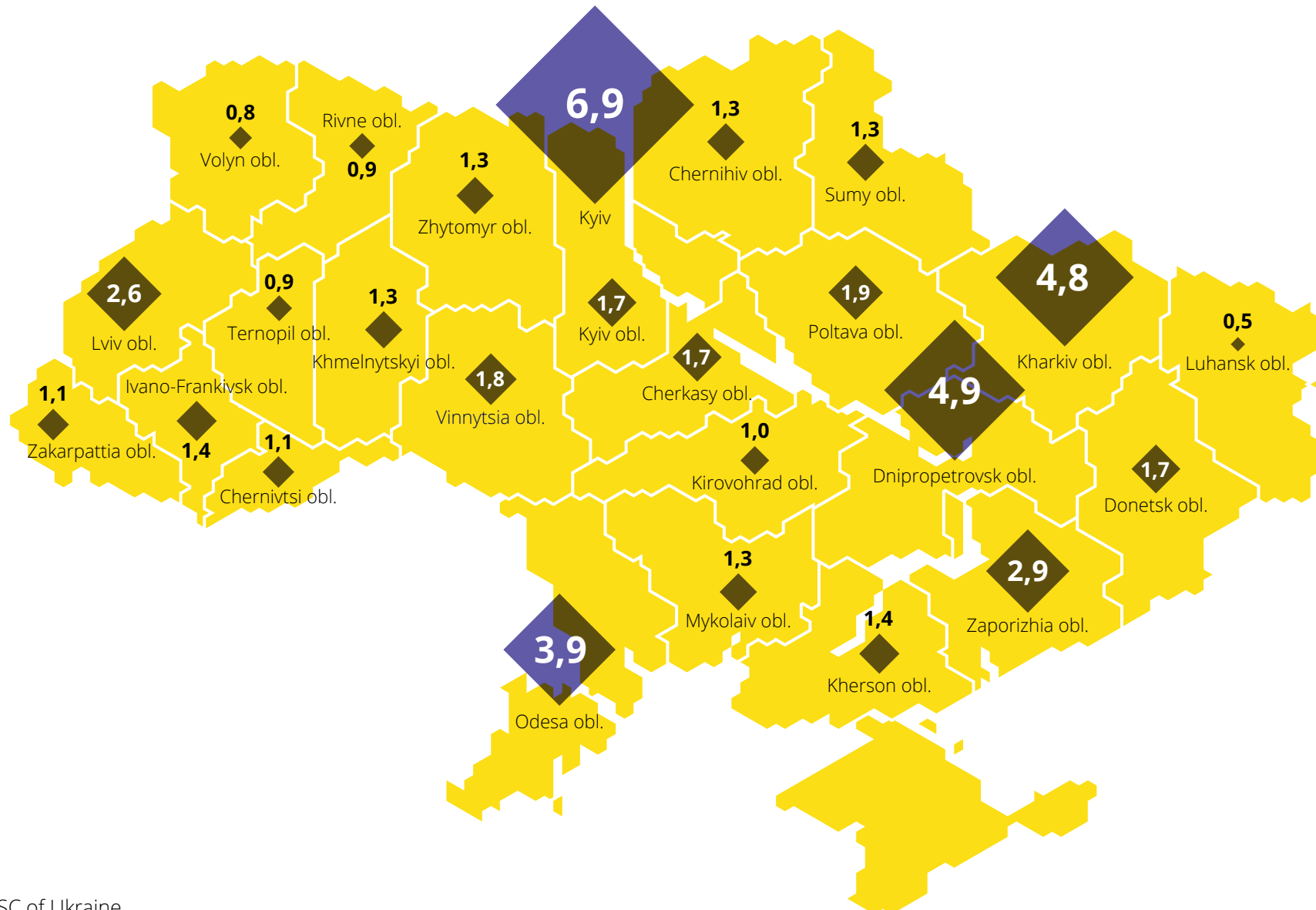


Retail turnover of the entities by the category of pharmaceutical products



REGIONAL BREAKDOWN OF THE MARKET

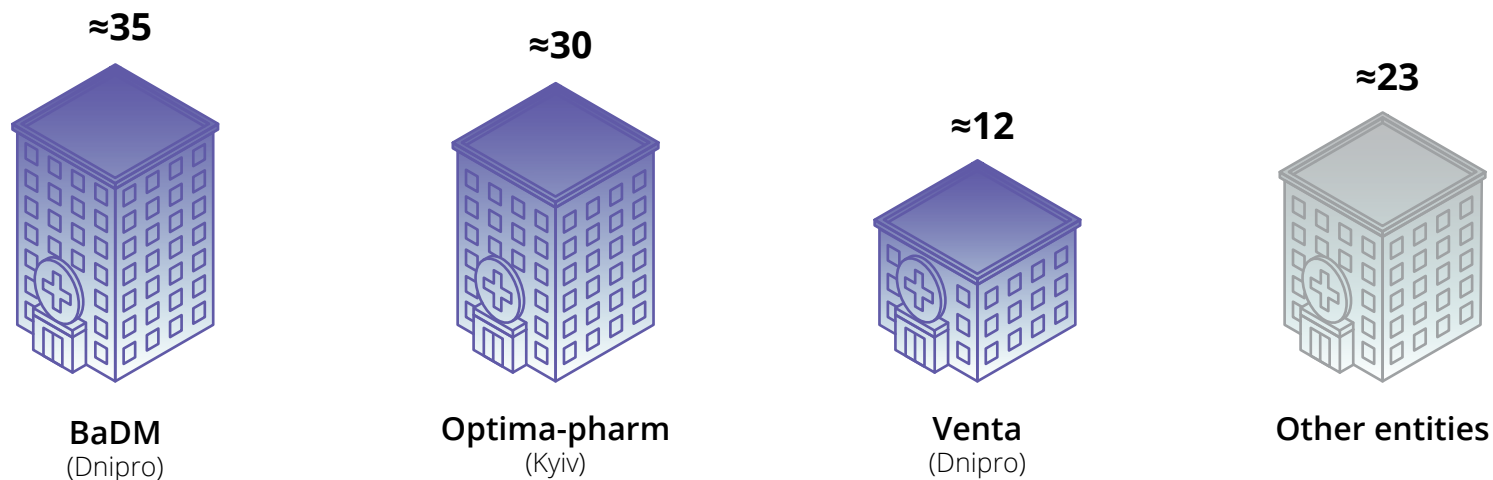
Retail sales of pharmaceuticals by the region in 2016,
bln hryvnias



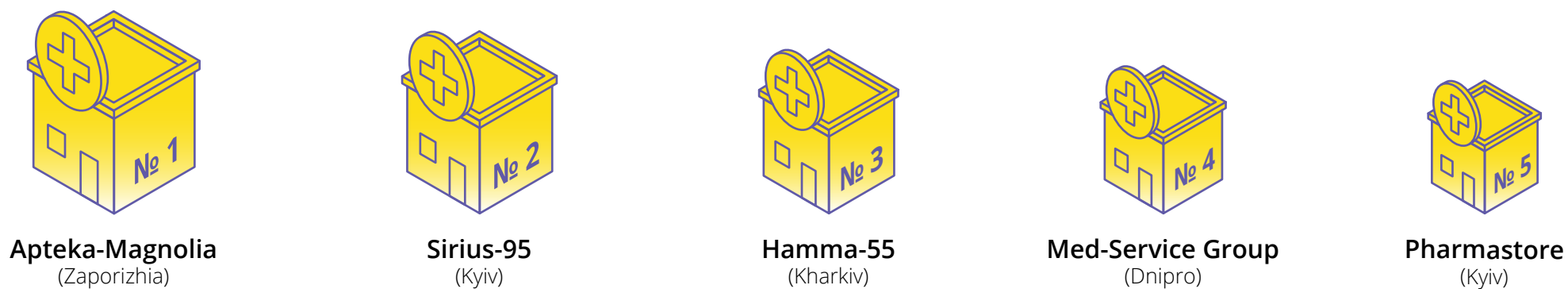
WHOLESALE AND RETAIL DEALER NETWORK

TOP-3 distributors by the share of market in 2017, %

Distribution market is quite concentrated. The market share of three biggest companies — 79%.

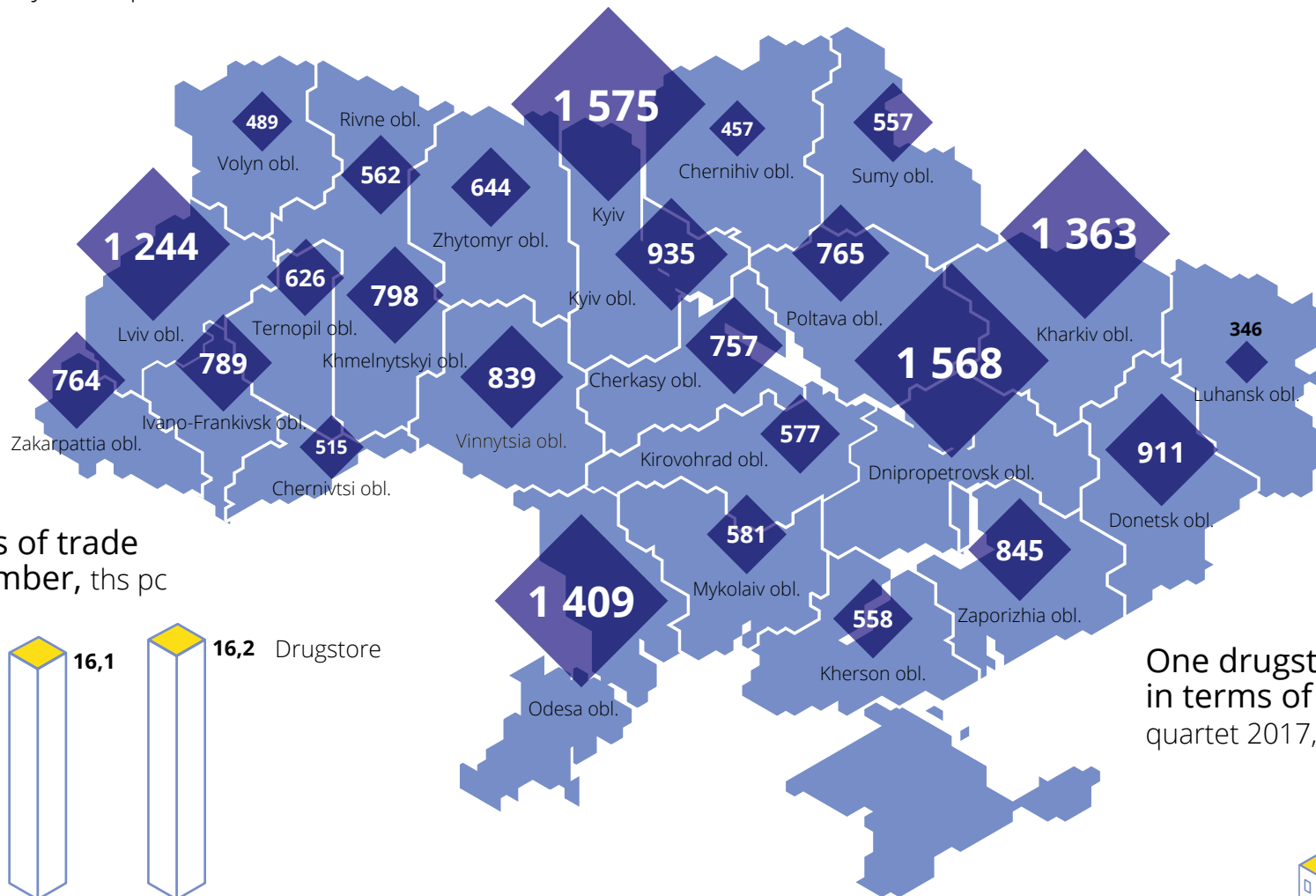


TOP-5 pharmacy networks by number of trade spots in 2017

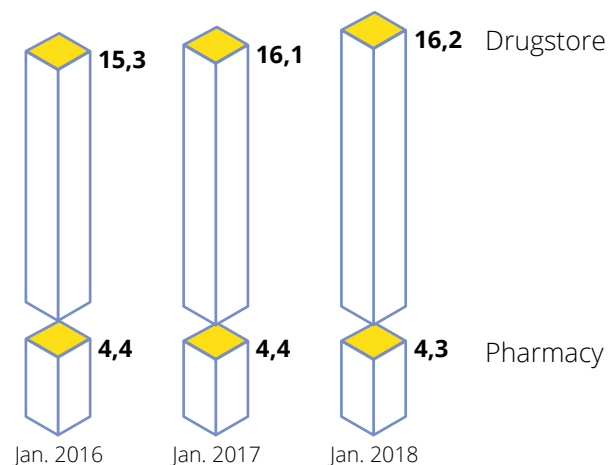


PHARMACEUTICAL RETAIL NETWORK

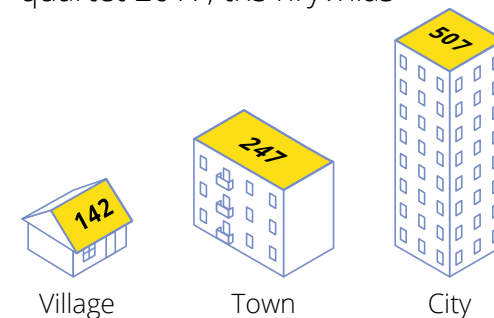
Number of trade spots by the regions,
as of 1 January 2018, pc



Dynamics of trade spots number, ths pc



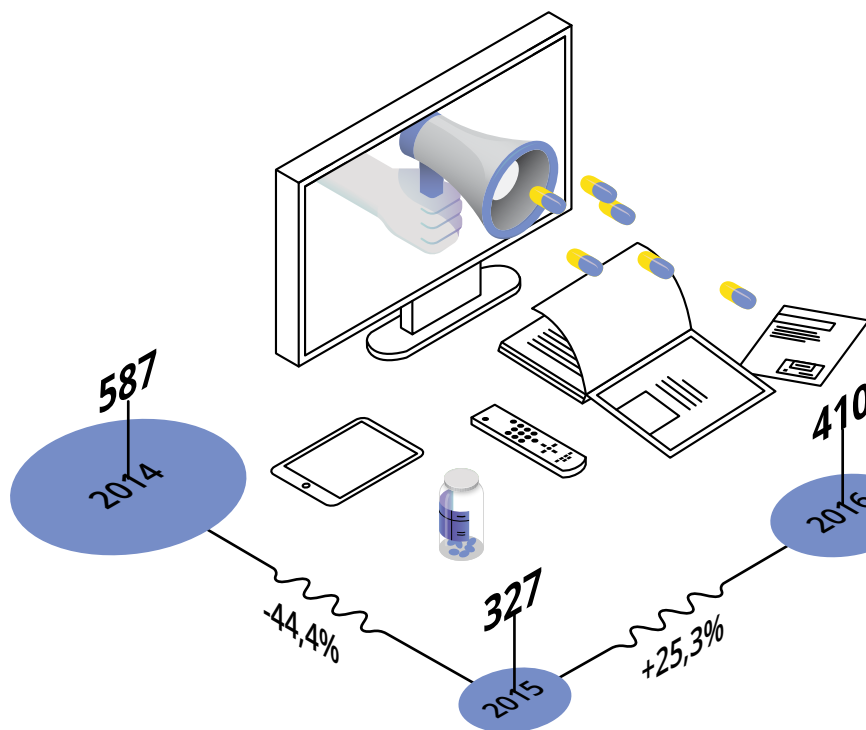
One drugstore income per month in terms of locality, for the third quartet 2017, ths hryvnias



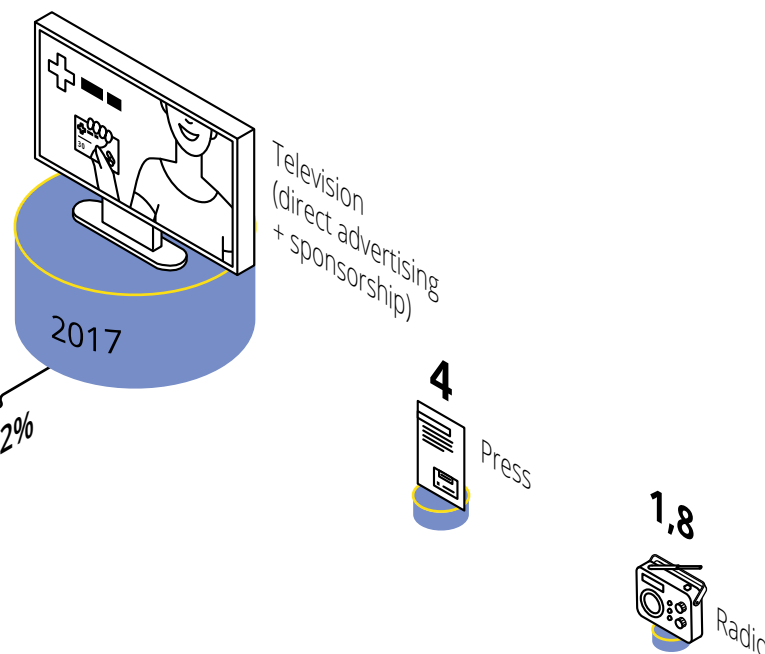
Source: Ezhenedelnik Apteka ¹³

ADVERTISEMENT OF PHARMACEUTICALS

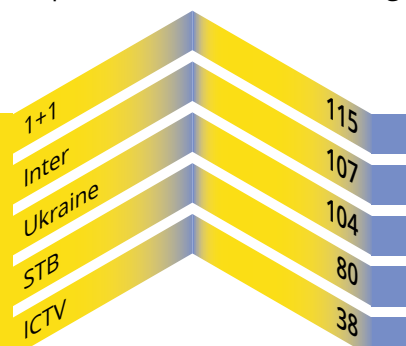
Investment in TV advertising, mln US dollars



Spending on advertising by promotion channels in 2017, mln US dollars



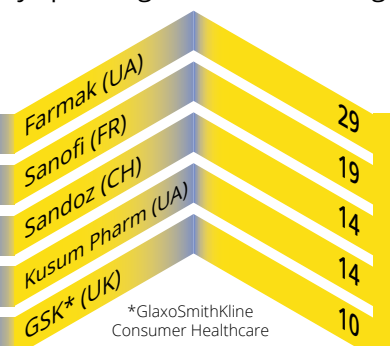
TOP-5 TV-channels by revenue from pharmaceuticals advertising



TOP-5 pharmaceuticals brands by spendings on TV advertising



TOP-5 pharmaceutical manufacturers by spendings on TV advertising



Leaders in 2017, mln US dollars

*GlaxoSmithKline Consumer Healthcare

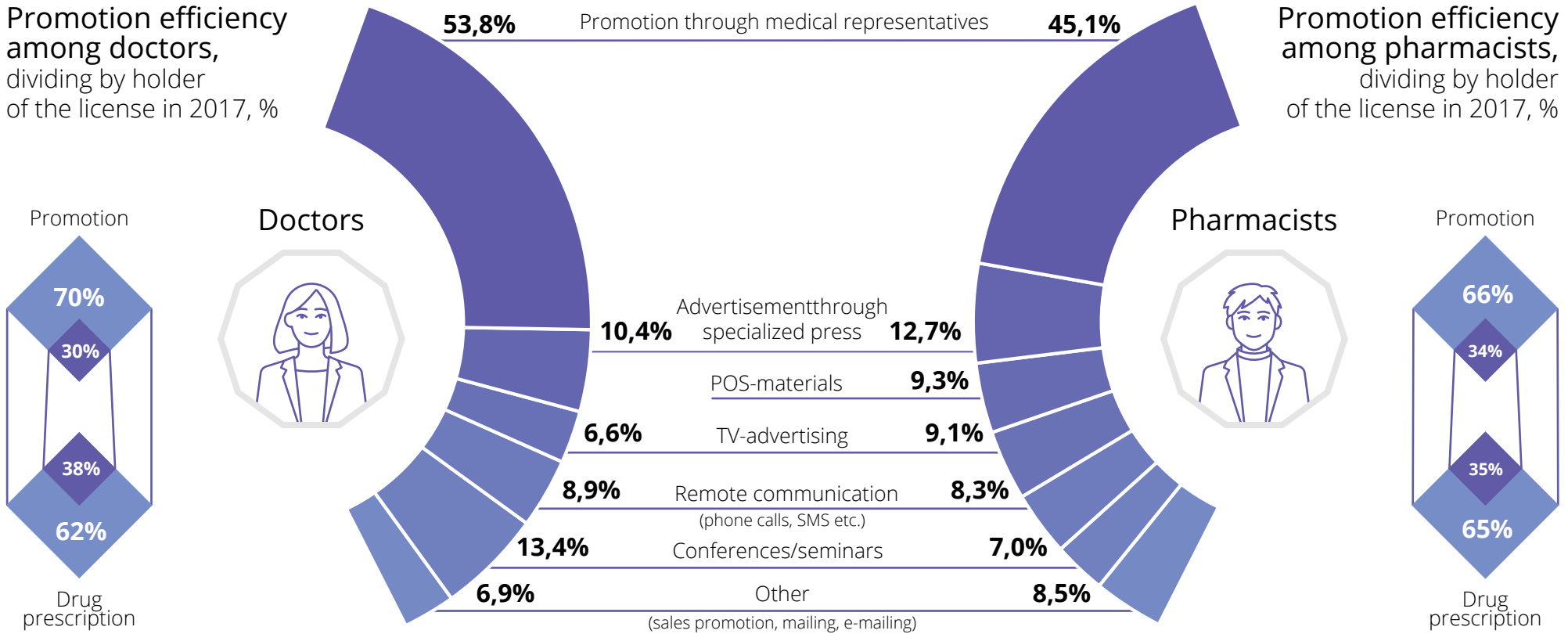
Source: Ezhenedelnik Apteka ¹⁵

PROMOTION OF PHARMACEUTICALS

Structure of promotion channels among experts in the field of healthcare in 2017, %

Promotion efficiency among doctors, dividing by holder of the license in 2017, %

Promotion efficiency among pharmacists, dividing by holder of the license in 2017, %



- ◆ Foreign
- ◆ Ukrainian

What is promotion

Despite an ordinary advertising, the great importance on pharmaceutical market belongs to promotion. It means spreading information about existing and new pharmaceuticals directly among experts in the field of healthcare.

What is presented here

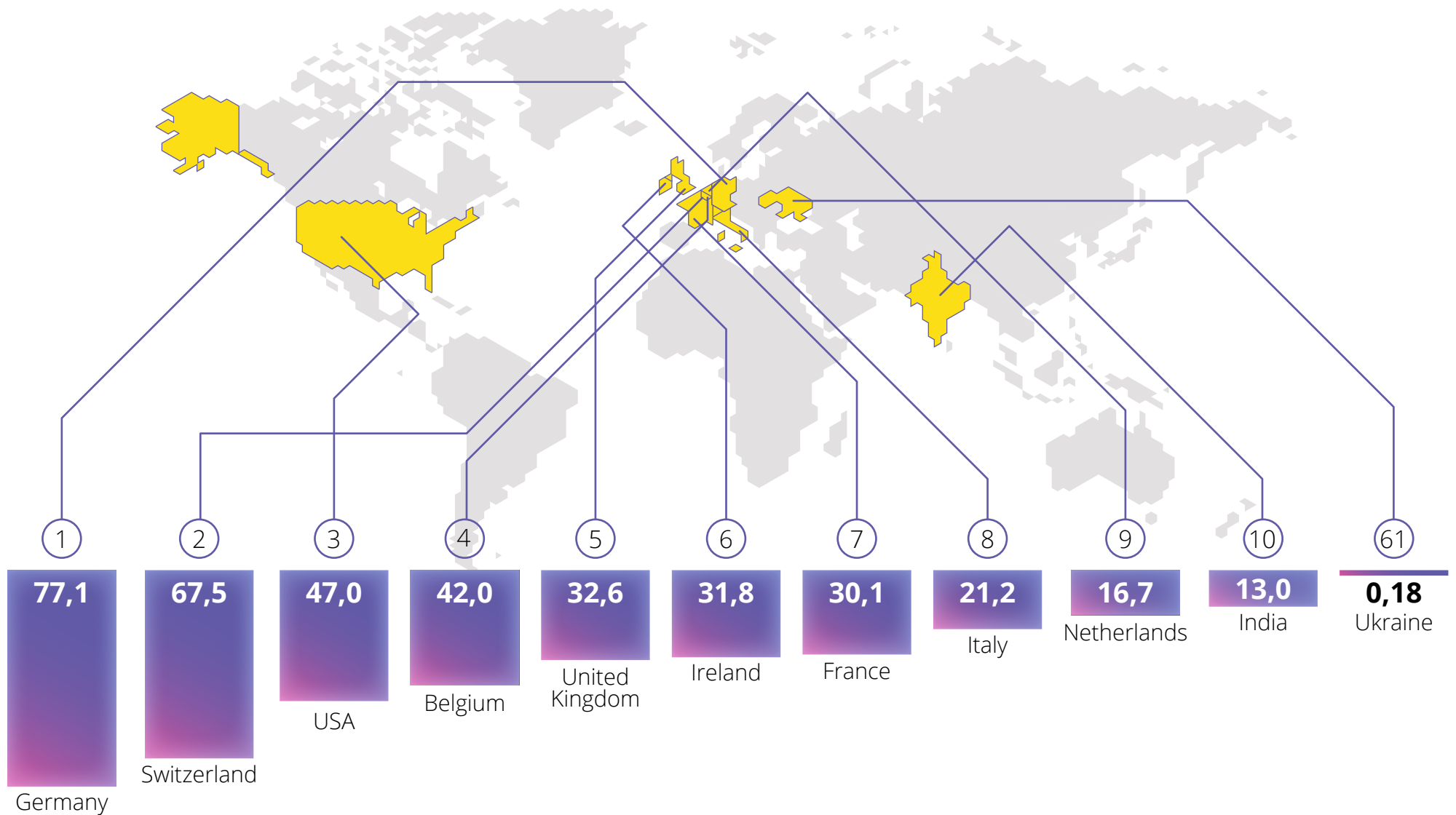
Data on promotion efficiency was received through telephone survey from former experts in the field of healthcare.

The background of the entire image is a dense, repeating pattern of pink-outlined capsules. Each capsule is oriented in a different direction, creating a complex, textured effect. The lines are thin and consistent in color throughout the pattern.

TRADE IN PHARMACY

GLOBAL EXPORT LEADERS

TOP-10 exporting countries of pharmaceutical products in 2016,
bln US dollars

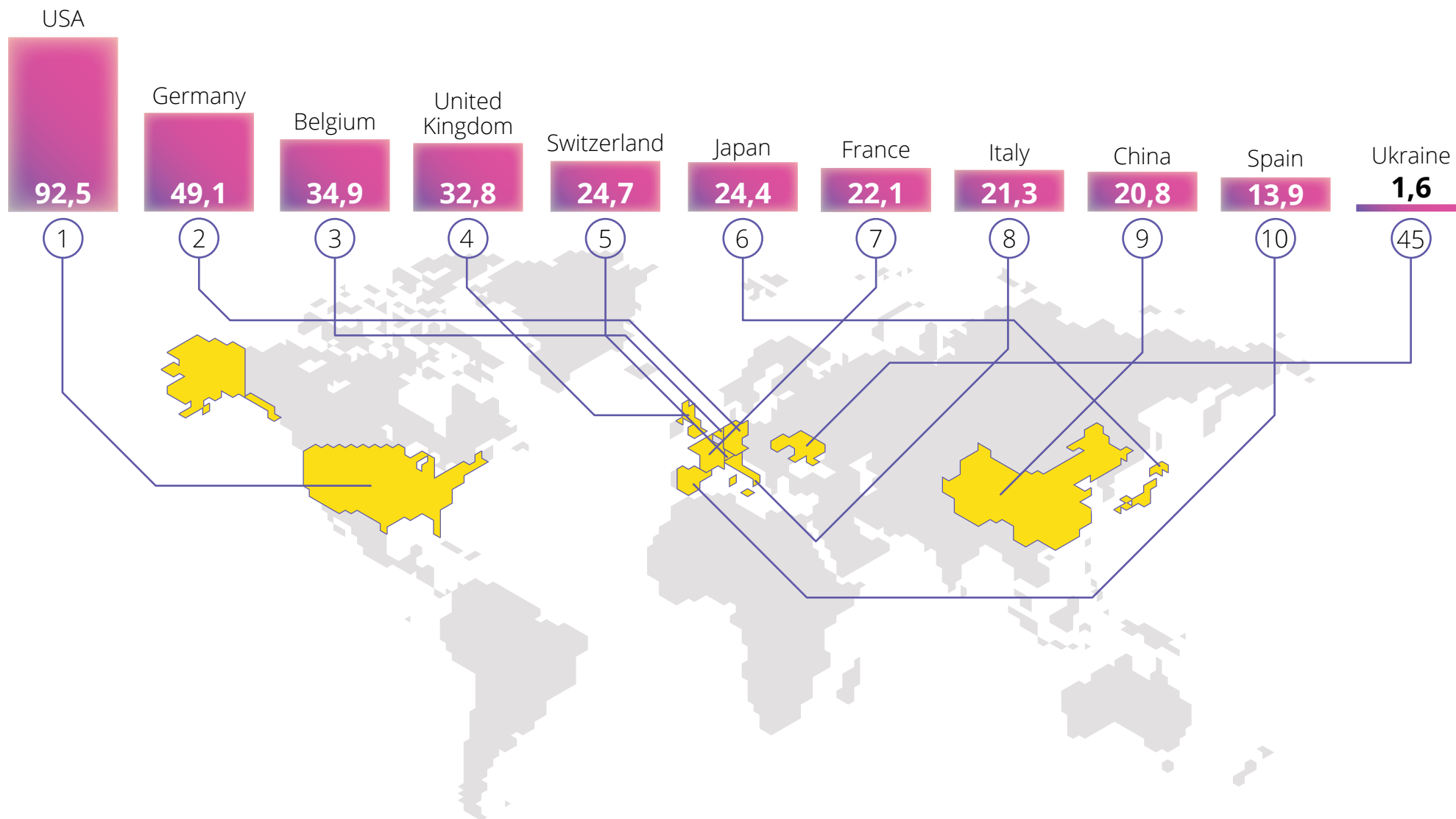


Source: UN Comtrade, SFS of Ukraine

○ Ranking position

GLOBAL IMPORT LEADERS

TOP-10 importing countries of pharmaceutical products in 2016,
bln US dollars

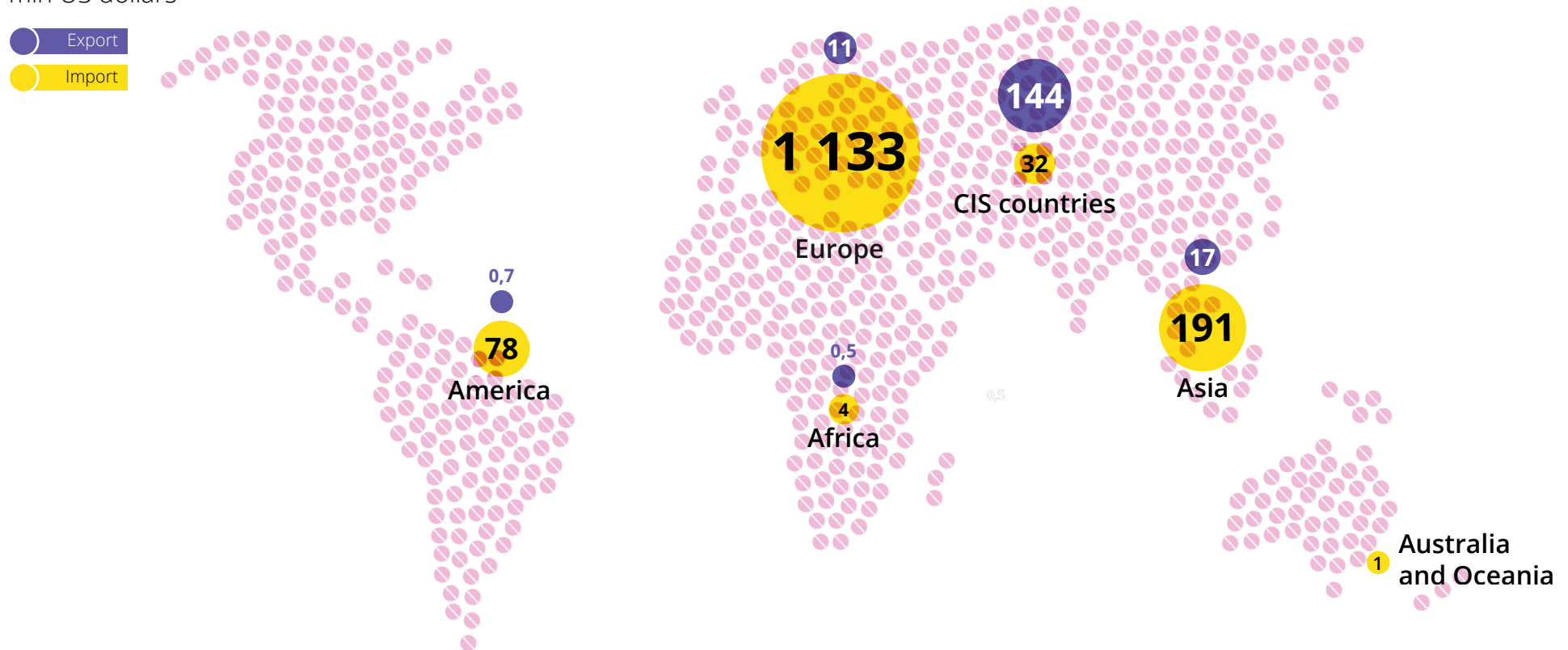


Source: UN Comtrade, SFS of Ukraine

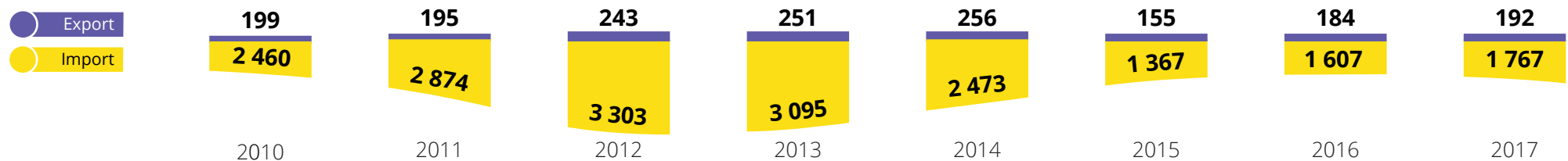
○ Ranking position

EXTERNAL ECONOMIC ACTIVITY

External trade of medicaments in Ukraine, 2017,
mln US dollars

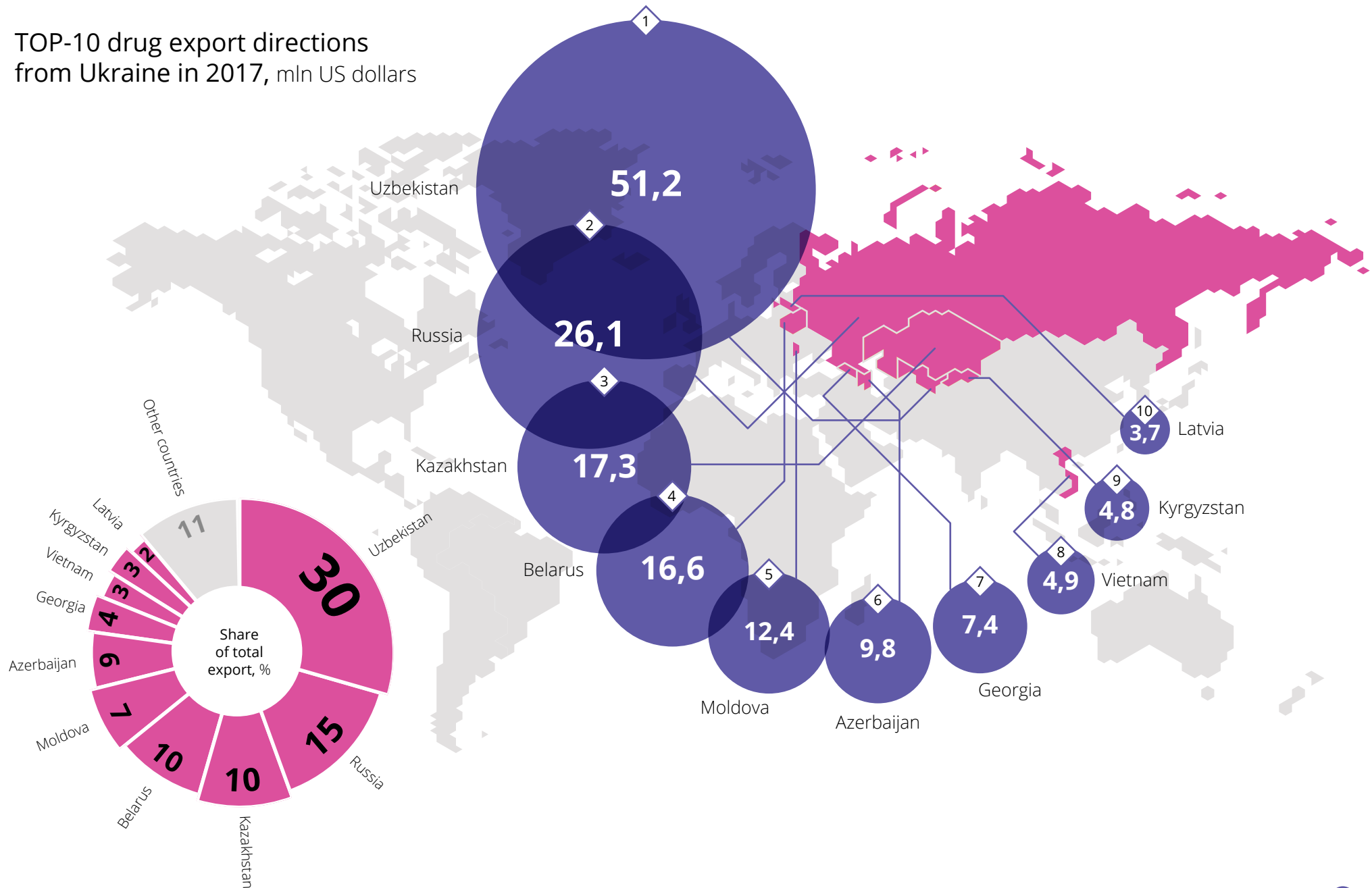


Pharmaceutical products trade flows in Ukraine,
mln US dollars



DRUG EXPORT FROM UKRAINE

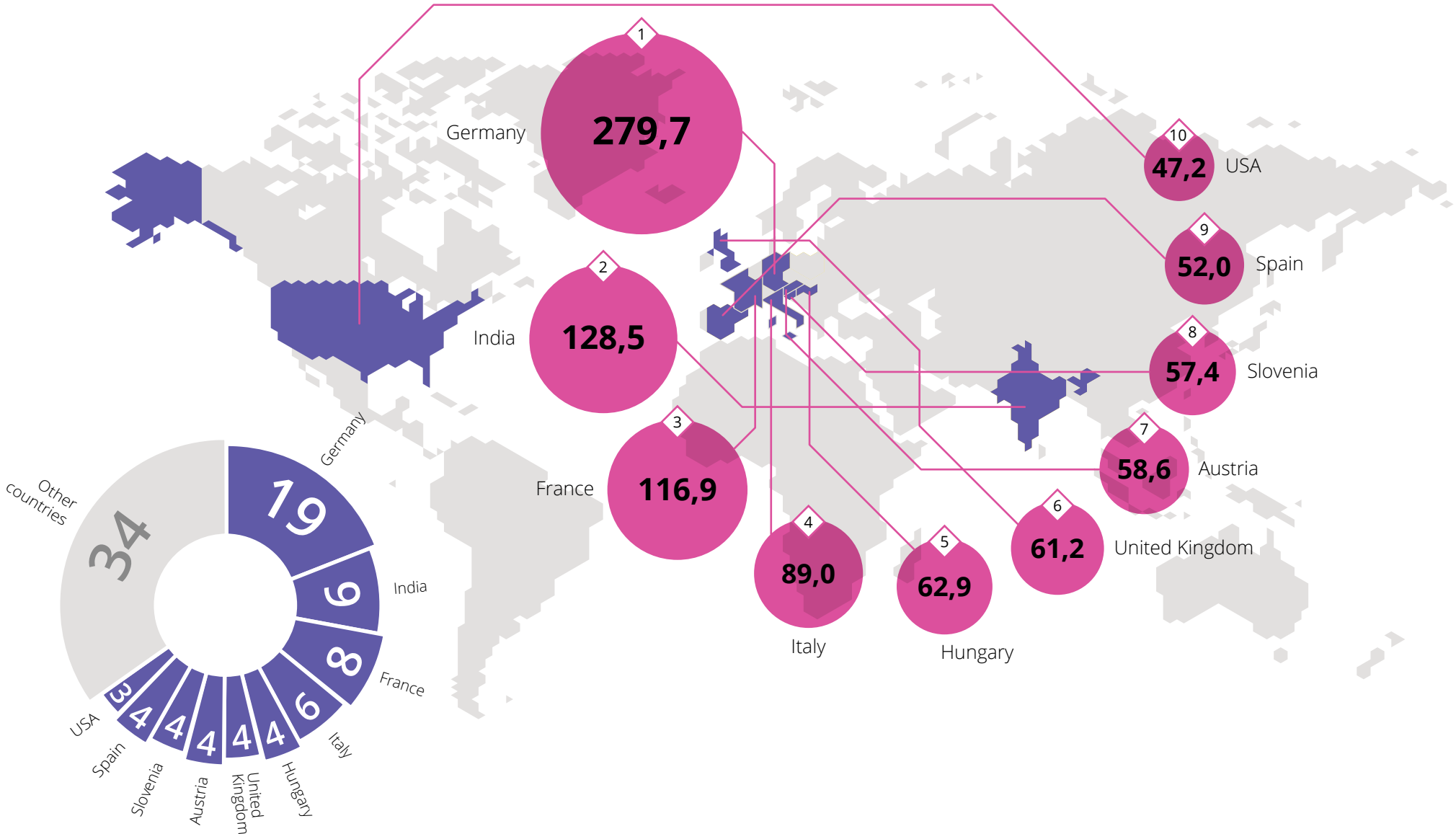
TOP-10 drug export directions
from Ukraine in 2017, mln US dollars



Source: SSC of Ukraine

DRUG IMPORT IN UKRAINE

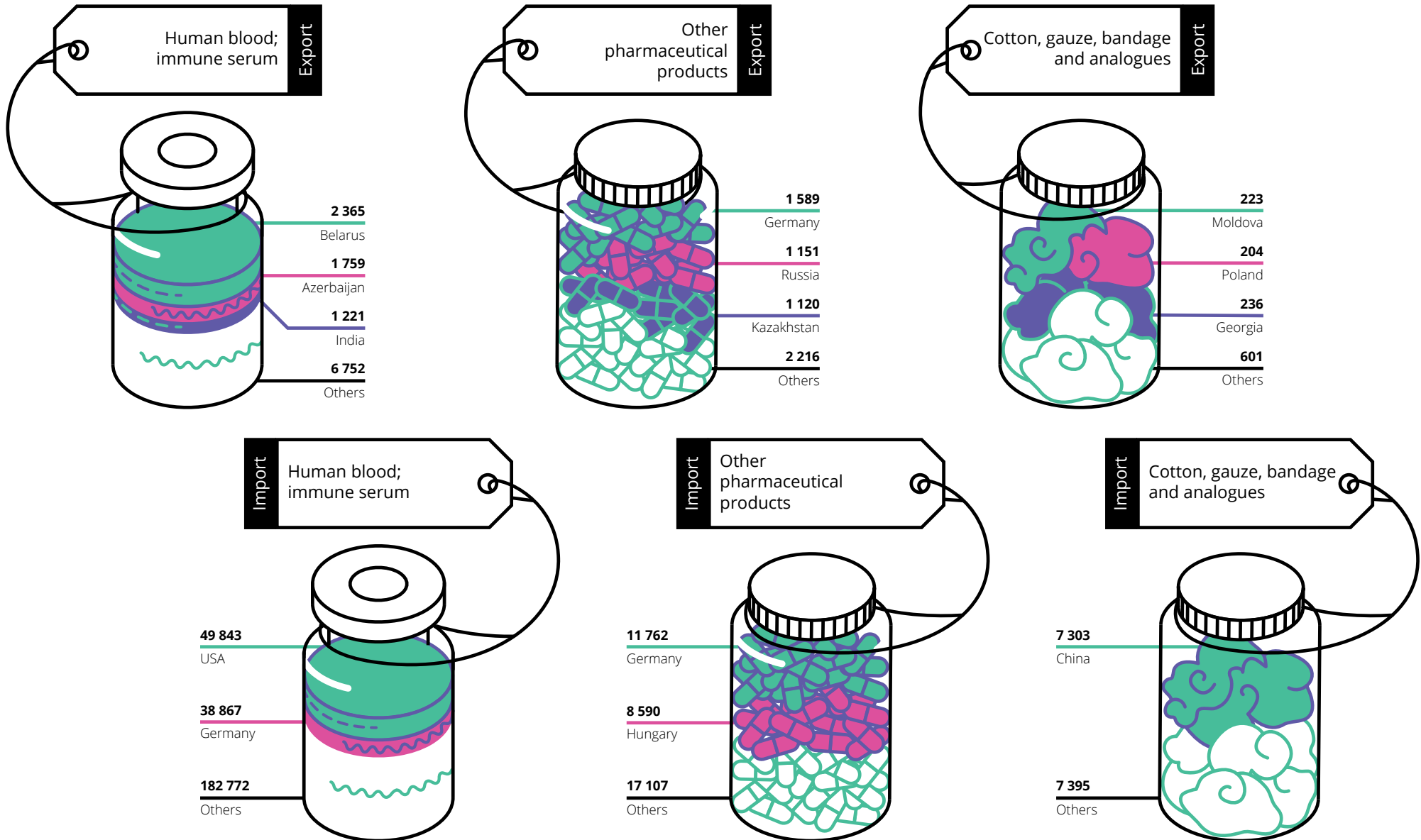
TOP-10 drug import directions in Ukraine in 2017,
mln US dollars



Source: SSC of Ukraine

OTHER PHARMATHEUTICAL PRODUCTS TRADE

Main state-partners in 2017, ths US dollars



Source: SSC of Ukraine

SOURCES

- Stock market infrastructure development agency of Ukraine (SMIDA)
- State Service of Ukraine on Medicines and Drugs Control (SMDC)
- State Statistics Service of Ukraine (SSC of Ukraine)
- State Fiscal Service of Ukraine (SFS of Ukraine)
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 1. Apteka Weekly № 3 (824) 23 January 2012
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 4. Apteka Weekly № 5 (926) 3 February 2014
 5. Apteka Weekly № 11 (932) 17 March 2014
 6. Apteka Weekly № 3 (974) 26 January 2015
 7. Apteka Weekly № 9 (980) 9 March 2015
 8. Apteka Weekly № 2 (1023) 25 January 2016
 9. Apteka Weekly № 13 (1034) 11 April 2016
 10. Apteka Weekly № 2 (1073) 23 January 2017
 11. Apteka Weekly № 7 (1078) 27 February 2017
 12. Apteka Weekly № 3 (1124) 22 January 2018
 13. Apteka Weekly № 5 (1126) 5 February 2018
 14. Apteka Weekly № 10 (1131) 12 March 2018
 15. Apteka Weekly № 12 (1133) 26 March 2018
- Farmak
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- Aequo
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- Evaluate Group
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- Fortune
- International Federation of Pharmaceutical Manufacturers & Associations
- International Trade Administration
- Lichtenberg, F: Pharmaceutical innovation and longevity growth in 30 developing OECD and high-income countries, 2000–2009
- Organisation for Economic Cooperation and Development
- PharmaBoardroom
- Pharmaphorum
- United Nations Comtrade Database

VIVID VISUALIZATION

for your content marketing:

TOP
LEAD



Research



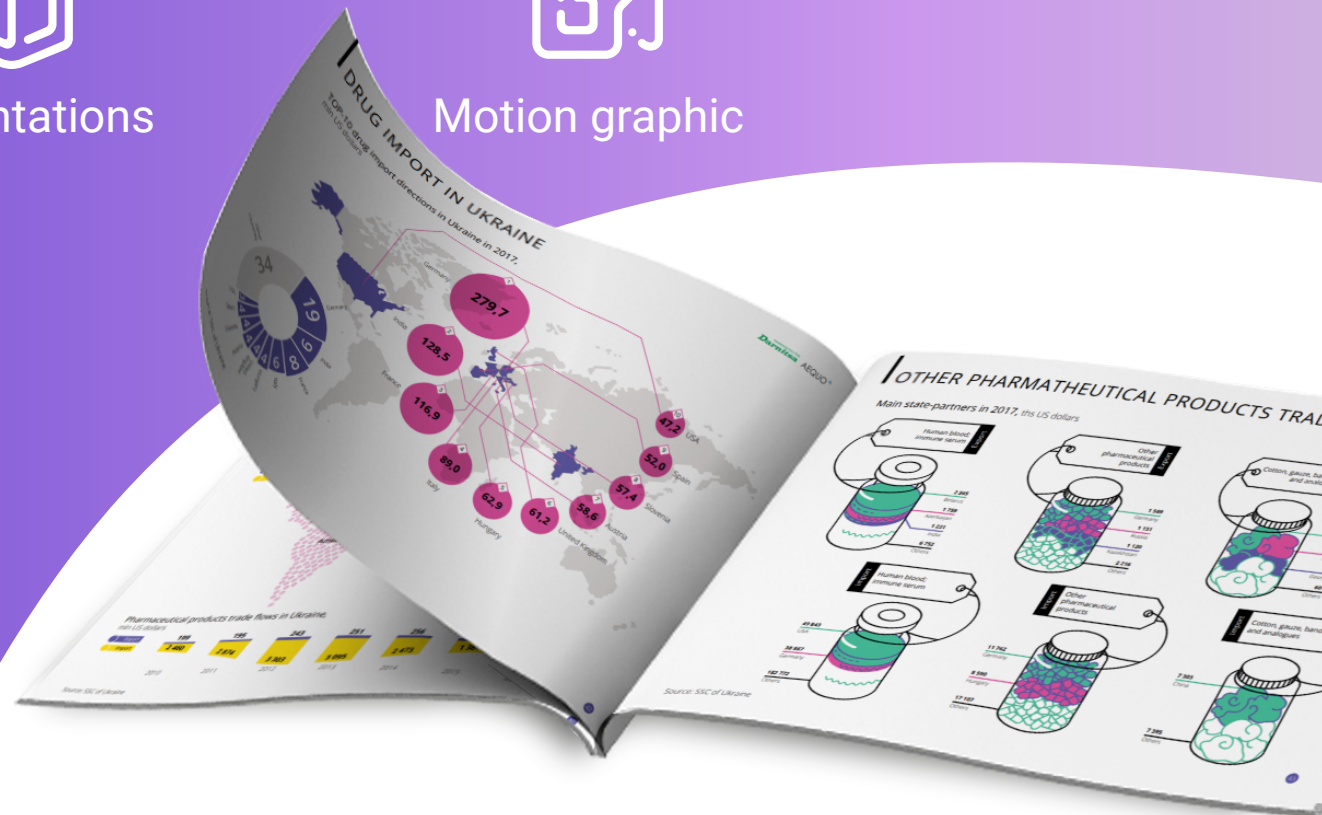
Presentations



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